SEQUENCE LISTING

<110> Karl GUEGLER et al.

<120> ISOLATED HUMAN TRANSPORTER PROTEINS,
    NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS,
    AND USES THEREOF

<130> CL001010

<140> 09/776,705
<141> 2001-02-06

<150> 60/251,836
<151> 2000-12-08

<160> 78

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1822
<212> DNA
<213> Homo Sapiens

<400> 1
ccattccaaa caagtcagga aagcctgcac aggactggat aaataattaa gaacagagtg 60
ttctgaacat caacacaaag tggaagaacc ttaagctgaa ggtacagtat attatttaca 120
ctgaaggggc ttgtgtgtgg acaagaaagc gctgacagct caaatggatc ccatggaact 180
gagaaatgtc aacatcgaac cagatgatga gagcagcagt ggagaaagtg ctccagatag 240
ctacatcagg ataggaaatt cagaaaaggc agcaatgagc agtcaatttg ctaatgaaga 300
cactgaaagt cagaaattcc tgacaaatgg attttgggg aaaaagaagc tggcagatta 360
tgctgatgaa caccatcccg gaaccacttc ctttggaatg tcttcatttta acctgagtaa 420
tgccatcatg ggcagtggga tcctgggctt gtcctatgcc atggcctaca caggggtcat 480
acttttttata atcatgctgc ttgctgtggc aatattatca ctgtattcag ttcacctttt 540
attaaaaaca gccaaggaag gagggtcttt gatttatgaa aaattaggag aaaaggcatt 600
tggatggccg ggaaaaattg gagcttttgt ttccattaca atgcagaaca ttggagcaat 660
gtcaagctac ctctttatca ttaaatatga actacctgaa gtaatcagag cattcatggg 720
acttgaagaa aatactggag aatggtacct caatggcaac tacctcatca tatttgtgtc 780
tgttggaatt attcttccac tttcgctcct taaaaattta ggttatcttg gctataccag 840
tggattttct cttacctgca tggtgttttt tgttagtgtg gtgatttaca agaaattcca 900
aataccctgc cctctacctg ttttggatca cagtgttgga aatctgtcat tcaacaacac 960
gcttccaatg catgtggtaa tgttacccaa caactctgag agttctgatg tgaacttcat 1020
gatggattac acccaccgca atcctgcagg ctggatgag aaccaggcca agggctctct 1080
tcatgacagt ggagtagaat atgaagctca tagtgatgac aagtgtgaac ccaaatactt 1140
tgtattcaac tcccggacgg cctatgcaat tcctatccta gtatttgctt ttgtatgcca 1200
ccctgaggtc cttcccatct acagtgaact taaagatcgg tcccggagaa aaatgcaaac 1260
ggtgtcaaat atttccatca cggggatgct tgtcatgtac ctgcttgccg ccctctttgg 1320
ttacctaacc ttctatggag aagttgaaga tgaattactt catgcctaca gcaaagtgta 1380
tacattagac atccctcttc tcatggttcg cctggcagtc cttgtggcag taacacaaac 1440
tgtgcccatt gtcctcttcc caattcgtac atcagtgatc acactgttat ttcccaaacg 1500
acccttcagc tggatacgac atttcctgat tgcagctgtg cttattgcac ttaataatgt 1560
tctggtcatc cttgtgccaa ctataaaata catcttcgga ttcataggg cttcttctgc 1620
cactatgctg attttttattc ttccagcagt ttttttatctt aaacttgtca agaaagaaac 1680
ttttaggtca ccccaaaagg tcggggcttt aattttcctt gtggttggaa tattcttcat 1740
gattggaagc atggcactca ttataattga ctggatttat gatcctccaa attccaagca 1800

tcactaacac aaggaaaaat ac   1822

<210> 2
<211> 547
<212> PRT
<213> Homo Sapiens

<400> 2
Met Asp Pro Met Glu Leu Arg Asn Val Asn Ile Glu Pro Asp Asp Glu
1   5   10   15
Ser Ser Ser Gly Glu Ser Ala Pro Asp Ser Tyr Ile Arg Ile Gly Asn
            20   25   30
Ser Glu Lys Ala Ala Met Ser Ser Gln Phe Ala Asn Glu Asp Thr Glu
        35   40   45
Ser Gln Lys Phe Leu Thr Asn Gly Phe Leu Gly Lys Lys Lys Leu Ala
        50   55   60
Asp Tyr Ala Asp Glu His His Pro Gly Thr Thr Ser Phe Gly Met Ser
65   70   75   80
Ser Phe Asn Leu Ser Asn Ala Ile Met Gly Ser Gly Ile Leu Gly Leu
                85   90   95
Ser Tyr Ala Met Ala Tyr Thr Gly Val Ile Leu Phe Ile Ile Met Leu
                100   105   110
Leu Ala Val Ala Ile Leu Ser Leu Tyr Ser Val His Leu Leu Leu Lys
            115   120   125
Thr Ala Lys Glu Gly Gly Ser Leu Ile Tyr Glu Lys Leu Gly Glu Lys
        130   135   140
Ala Phe Gly Trp Pro Gly Lys Ile Gly Ala Phe Val Ser Ile Thr Met
145   150   155   160
Gln Asn Ile Gly Ala Met Ser Ser Tyr Leu Phe Ile Ile Lys Tyr Glu
                165   170   175
Leu Pro Glu Val Ile Arg Ala Phe Met Gly Leu Glu Glu Asn Thr Gly
                180   185   190
Glu Trp Tyr Leu Asn Gly Asn Tyr Leu Ile Ile Phe Val Ser Val Gly
                195   200   205
Ile Ile Leu Pro Leu Ser Leu Leu Lys Asn Leu Gly Tyr Leu Gly Tyr
        210   215   220
Thr Ser Gly Phe Ser Leu Thr Cys Met Val Phe Phe Val Ser Val Val
225   230   235   240
Ile Tyr Lys Lys Phe Gln Ile Pro Cys Pro Leu Pro Val Leu Asp His
                245   250   255
Ser Val Gly Asn Leu Ser Phe Asn Asn Thr Leu Pro Met His Val Val
                260   265   270
Met Leu Pro Asn Asn Ser Glu Ser Ser Asp Val Asn Phe Met Met Asp
        275   280   285
Tyr Thr His Arg Asn Pro Ala Gly Leu Asp Glu Asn Gln Ala Lys Gly
        290   295   300
Ser Leu His Asp Ser Gly Val Glu Tyr Glu Ala His Ser Asp Asp Lys
305   310   315   320
Cys Glu Pro Lys Tyr Phe Val Phe Asn Ser Arg Thr Ala Tyr Ala Ile
                325   330   335
Pro Ile Leu Val Phe Ala Phe Val Cys His Pro Glu Val Leu Pro Ile
                340   345   350
Tyr Ser Glu Leu Lys Asp Arg Ser Arg Arg Lys Met Gln Thr Val Ser
        355   360   365
Asn Ile Ser Ile Thr Gly Met Leu Val Met Tyr Leu Leu Ala Ala Leu
370   375   380
Phe Gly Tyr Leu Thr Phe Tyr Gly Glu Val Glu Asp Glu Leu Leu His

```
385                    390                    395                    400
Ala Tyr Ser Lys Val Tyr Thr Leu Asp Ile Pro Leu Leu Met Val Arg
                   405                    410                    415
Leu Ala Val Leu Val Ala Val Thr Gln Thr Val Pro Ile Val Leu Phe
                   420                    425                    430
Pro Ile Arg Thr Ser Val Ile Thr Leu Leu Phe Pro Lys Arg Pro Phe
                   435                    440                    445
Ser Trp Ile Arg His Phe Leu Ile Ala Ala Val Leu Ile Ala Leu Asn
         450                    455                    460
Asn Val Leu Val Ile Leu Val Pro Thr Ile Lys Tyr Ile Phe Gly Phe
465                    470                    475                    480
Ile Gly Ala Ser Ser Ala Thr Met Leu Ile Phe Ile Leu Pro Ala Val
                   485                    490                    495
Phe Tyr Leu Lys Leu Val Lys Lys Glu Thr Phe Arg Ser Pro Gln Lys
                   500                    505                    510
Val Gly Ala Leu Ile Phe Leu Val Val Gly Ile Phe Phe Met Ile Gly
         515                    520                    525
Ser Met Ala Leu Ile Ile Ile Asp Trp Ile Tyr Asp Pro Pro Asn Ser
         530                    535                    540
Lys His His
545


<210> 3
<211> 32373
<212> DNA
<213> Homo Sapiens

<400> 3
agcttagcaa tatggatcaa gaggtccaat acctgattaa taaaagtttc aggagtaaac 60
aaaggggaag aaatagtttt tttaaatagt agaacttttt ttatttttag aaaatgtgtc 120
ttctatagaa gaaagacaag ccttttgatt gggccgtctg catgctgagt atgatgaatt 180
ttaaaagcga ctcacatcta gtcacgtcgt gatgaaagga taaggataaa aattctgaaa 240
tcctcagaaa accatcgata aattatctat aaagaaataa gagccagact catcaataga 300
agctagaaga gagaagtttc ttcaatattc tgaaggaaaa tgcttctgaa tctagaattc 360
aaacaattaa caaagtttga aggcaaaata aagaattttc caacatgaag caactcagaa 420
attctattta cagacatagg ctcattgtgt gaaaaaagtt attcaaggca ttattttagc 480
ataatgcaaa ataaactgaa gaaagaagat agaatgccgt tcaagaaact agcagctgag 540
caagactcag aggttggagg aggaagccat tcagaatgag aaagagcata gaaaatttgc 600
tttcaaagtt ttggtaatat agaattatat ttcacttatt atgtagtcaa atacaccact 660
ttgtctttag ggcatactat ttatacagtg ataatactgt aattgctgct tattggtttt 720
ccatgtttag aaacaaccta caggcaagtt atgacacttg tttcacagaa caagatgaaa 780
atattatgat tctcaaattg taaaagtatt ttattaacta aaataattag gagtgtagga 840
gaaggaagga agaaagaaa aagtatgcta atgtccttat tttttatggg taaccagtct 900
aaaatcagta aaccaagtca aaaaagcttt agtgaattat tcagatctag aatggctaac 960
tttaagtaac aagctaaaaa cagaaaccgt caatagtggt tgctgctggg aagtgagact 1020
ggtactgtgt gaagaatgag gaaaaccttt gtactcattt agtgagtttc tttttttttt 1080
cttttaccca tatgcatgtc ttacttctat tctctcttag cttttaacct gcttctttc 1140
atcttttatg tatatacatt taggctgcct tatattaata atagtttcat ttttgttcct 1200
cctgcttaaa acactgtgtg ctattttttt aaattctgag aactgctttc tttatttcta 1260
gacaattctc tgccattatc tctttctgtt ttgtctcacc ctagtctcac aattctctat 1320
attggaatga ctatcagtgt atatttgaac ttgtaattct tattttttcc ccattcctct 1380
taacttctta tttgtatttt tctttttta atctcttcat gctataattt gagtgatttc 1440
cacagatctg tctttcaatt ttataagtct tccttcagct gagttttttt aaatttcaat 1500
gattctattt ttttctttt tttaagaatt cctttttttg actcttttg caacagcctg 1560
ttctcctttt atattccttt ataatgtttt tattctgtga aagttattct cttattttga 1620
atgttttctt tcaaaatgtc tttcttttta ttaatttaat gtaaaagtcc cttttaaatt 1680
```

3

```
gctttgttat ttgtagttcc ttagatgtga attttatcat ttcttgtgcc tactggcact 1740
cttgctagtg agtttccatg tgtgttctat atgttttgta atttgaggat gtgaactttt 1800
ctcaagtgtg agttgccttt caaaaaagta ctgccatggc actgggttgt ggaggtattc 1860
ccatgtggta gtttctgttt gtcagaggaa tagcacattt tgtgacttct ggagcaattt 1920
ttatgttagt ttctctgctc aagatttcct tatcaaatgg gtattgcaca tgtcatgacc 1980
acacttttca agaatgatag tgtttctcct aatacgatgg ttcaacaata attgaatgaa 2040
tctaatggta agaatttcag aagaaattat atcaactaca tatagtagat tcaaggcatt 2100
tttcaaaaac acaatgccag tccacccctt ttcactatac aattgaggaa aatgaggtcc 2160
ccaaatgtta aatgacttct gctgagatcc aatgaattaa aggcagagca gaggctaaaa 2220
tctagatctc tttgttgtta aaatacattt taatttgaca cagatgatga gtaatgctga 2280
cccagaggta aatctgaact ttcttttgtt actattctta actttggctt caggatccaa 2340
gtgcctagaa agttacttcc taaacttgat cctcacctat gttgcatatt atcaagcatt 2400
tggtggtgtt aattctttca tgtccaatta aattaaagca gtaattttct ttctagttat 2460
tgctagtaga gacactggta gattctgcct tggtagacct tcctctgtca acaatttact 2520
tttgtcttcc tttcttttaa aacatgtatc ccactcacaa atacctaaat ttccttgaag 2580
actgctgcca tgttttaaga tttctttttt tttccatagt gactagtaaa acctgccatt 2640
ttcattatac ataggcactc tataaatatc tgctaattta gcaattatta gtaatttcct 2700
ttcttctctt ccatttcttc ctttcttgta ttgggtaaag gaacatttca ggatttgctt 2760
atgtaaagtt ttcaggagtt tctttccttc ctcccttta cagagagcat acaaaatgta 2820
gatgattcat attcacttat ttcatttaaa taaaattata atgatgtatg ttgtgttctg 2880
tttgcagaac agagtgttct gaacatcaac acaaagtgga agaaccttaa gctgaaggta 2940
cagtatatta tttacactga aggggcttgt gtgtggacaa gaaagcgctg acagctcaaa 3000
tggatcccat ggaactgaga aatgtcaaca tcgaaccaga tgatgagagc agcagtggag 3060
aaagtgctcc agatagctac atcgggatag gaaattcaga aaaggcagca atgagcaggt 3120
atggggttaa aaattactat gttccatgga aaaataagac aggatgtgga catggaaaac 3180
agggtcttga tgggaagaac tggatttatt acaggtaaat ttgtgataac aatgatattg 3240
atgctagcac atcaattccc tggtcctgaa atacagtgat aatgtcaatc tcttttgtga 3300
ctgatttaga attgaggtta caatgtcttt gtctccatta ataatgtgta ataattttaa 3360
ttattttagc ctattgctcc tcttatcttt ctcagattcc tctttgaatg ttgctacacc 3420
tcctggtttc tgtagggatt cttttctctc taaaagtatc ctctgggcaa gctcactcac 3480
aactactatg gcctcaccct ccaaatatat gccatatacc cagcctgtta agtttctcta 3540
ctgaatttca gataattata tctgaatgtc tactgcacgt ctctactgga ccattactgt 3600
gtctaaattg cctcatttat aaagttaaac ctgtaatgtc taatactgaa ctcctatctt 3660
tccctccaaa acctgctcct cctctagtaa tccccatcct agtgaaaatc actgctatca 3720
tgtagcaact cactcaaaag cccctaggtg taaactttga cccacatagc caacggtcag 3780
tcatatccag ttggtttgac cttattaatg cttcaaatac acctactttt ctgtacccat 3840
tctactgtgg tcttacgtta ggcctacatt aaatgtgaga cagggagaga gccctgattt 3900
ctctccctgt cttacatttt gctctcctct gtctagccct ctacactcct gcaagagcaa 3960
tctcttacaa ttgcaaattg aatcaatttc catccttaga taaagccctt ctgcacctct 4020
ccaatagcca taagagaaag tagattacac acactgctgg gcacgtaagg tcctttgtga 4080
tctgttcttg acctgcccct cctgtcctgt tttttgccct ctccctattt gttacttgtt 4140
gccttcactc attctgctcc aactgcctgg aatcagtcac ctgctccccc tttctccgtg 4200
ttgacacctc tcatccttca agaatcagct caacatcagg tctcctatgc agcctttcc 4260
aaattactct actcccccat gtagaagtga ctgcccctcc ttcatgtacc ctctccctgt 4320
gcagatgtta attacgccac tactacaggt taatggcctc tgtggtccca ccacctgcca 4380
cattgtctgg tgcatagtga gtgcacaata gttatttgat aagtcaattg atttcccaca 4440
aaatgttata tcaaattgta catgatttaa gatgctcaga agggaatttt tgaccaaatc 4500
taggcgtgaa atagagaata ttgtgctcaa acaaagactt ctcattttat ttacaacacc 4560
caggaaaatc catcaggaga aactaccgtt cttccttcaa gtagctcagt gcaatgaact 4620
ttagggatgt cggactagag aggccactga gatgtaaatt atagcatttt ctaaattagg 4680
tgacccttga agaaacacta gggtgctaga agacagggct ttggagtctg cagagtagtt 4740
gcctgacttt agagaagctg tttgtcctct ttgagcttca atggaaatg taaaatggca 4800
aaccaacagc tgcttttcaa ggatgagatg ggtgaccaga atatagatga cattcaatac 4860
ttttttatta cttctccttc actgcattac cctcagtaaa ttgattcaaa cctgaggatg 4920
tttctgaaag gcatgcacac aaatatgagc tctgccgagg ttgacagagt taaagggac 4980
accctcctaa gaactgtcat agtgtcattc cacttgatcc tcaaaagcca gagtagaaag 5040
agcatgaatg cttttcttaa gcttcatgca atgtgttccg aaccactcac agtgacttac 5100
```

4

```
cttttatctc ctggcttaaa cataggacat cattttgcag tttttaaaat cagtttaaag 5160
agatgggttt tatctatgtg tggtttggat tgaacccta aatgtaaatt tttgagaaat 5220
tcaacataat gtatttattt gtgatcatta tacttgtgtt ttcaatacat gctgggtttg 5280
gtatcaaaac atttaacata ctggggacat ttctcatcta ttttatacaa tcttggcatg 5340
ttaaatgact acaactcatc tcatgccaaa ataagaacat gcaaatgcct caaagaaaga 5400
aaatctgttt acttttcaaat tctcaatttt aaaaactact atggaataca gattttagtt 5460
tattgattaa aataaagatt ccagagttta aattctaggt ggcactttg ttttttatagt 5520
cctcaggccc atttttaggct tcatttttatc ctgtcatctc agtctccaac tgtgaacatt 5580
atgtaccagt cttcacatag caggtacatt aattacagac cattaatgta aaccacaaaa 5640
gagtggtggg cagtgggtgg ggggtgaatg gaaatggaaa gaggcaacaa ctgagggcat 5700
tgtgctttct gtgagaaata tggggagaag gctaggaaat gttcttaact tgtgtactca 5760
gagctattta tgccttgagt tctagaaaag cacatacaac tttgtggttt cgtgtgctgt 5820
ttctatctac atctcatact gttttctatt ctcaaaaagt aaccctgtca tcctctttcc 5880
tctccagatt attttcagga ttagcttctg ttataaaaaa tagcttgtac agatctccta 5940
caataattat tttctatttt atttctaagg tttatttatt tatttattga gacagacaga 6000
gtttcactct tgtggcccat gctggagtgc aatggtgcaa tctcggctca ctgcaacctc 6060
tgcctcccag gttcaagcga ttctcctgct tcagcctcct gagtagctgg gattacaggc 6120
gcctgccacc acactcggct aactttttgt atttctagta gagacgaagt ttcaccatgt 6180
tggccaggct ggtcttgaac tcctgacctc aagttatcca cccacctcag cctcccaaag 6240
tgctgggatt acaggcgtga gccactgtgc ctggcctcta ggattatatt aatagaacaa 6300
tcttcaatta ttttatcttt ctttatcttt cttttcatgt aggaaatgtc ctaaaatttt 6360
caaaccctca atttgaaagc actttttaaaa tcatacatag tcgagcattt tatataaaaa 6420
caactaaaaa gtctgtgaca ttttgcagta taaaaatgca atggcagcag caggccttat 6480
taattgagcc tcttggaaat gtggctggtc ctaggtccgt agcctcaaag gccctggctt 6540
gtaactgcag gagctgacca gcacagctct ataaccaagt tgtacatctt ctagcctgtg 6600
tccaagaaaa ccagaatcac aacgctctgt ggatagtgac atcttaaagt tttctttccc 6660
tcccaactct tttgccagtt cattgaattg ctttaataat ttccttagtt tcattcatta 6720
tctgttaata atccatgtac attttgagag taattaaaac acatacgcac acacagaaac 6780
aaccaacaca acacacagct accactgaat tactttccag taagagatgt atgtataaat 6840
gattgtacca aaaaaaaaaa aagaaagaaa ataccagcta cagggccctg cctgggactg 6900
cttgatgcca ggggggagaat ggggtctccc cctgggtatg ggtgggtatg ggcctgctgc 6960
ttcacctttc tgagccacag ttccctatag ggatattttg aacatcagat gagataagga 7020
tcacagtgcc taggcatta ataaatattc gttgaattaa taaaatcatc tgattatggt 7080
atggtagtag ttcagaaaat tctgtcataa ccctgtactc tttctttgga agggctctaa 7140
atgggaacac aattagttgt agtctcttgc atagctaatg tgagaaagag ggaatgtggt 7200
ataaacaatt ttttaactaa aaataatatt tccttccttt ataacatcct tcttccatcc 7260
caaagtatag ttgtaaatgg aactcaaaat tgttggtctg gaatgaccgt tagtgtgaag 7320
gaggaaaaga aaattggggt gtcttatttc ccctcctctg attcagttac ttagatcacc 7380
tgaaacatac atatgattca gagcatatat ttagatgttt tcactttctt atttgtgtgt 7440
gtgtgtgttc agtcaatttg ctaatgaaga cactgaaagt cagaaattcc tgacaaatgg 7500
attttttgggg aaaaagaagc tggcagatta tgctgatgaa cacgtaagtg aatctatgct 7560
ttcaggcaat aaacgggact gagggtgtct gatctaccta ggtctctgtg ggaaaacaat 7620
gtgactgaaa ttttccaagc cttgatcagc acattctgtg tttattcagg ctcttactgg 7680
aataagggct tgttttttcc tgttcgccat atggctgcat gaatcattta tgaaacttat 7740
gtgttttggg gggaaatcat tctaacccaa aggtaatcta caatcataca tgttttccct 7800
tctttatgtg actccccttg taatttgtat ttttactgag gcctctgctg aaaccaagca 7860
ctgcattccg ttgaaaatta catgctttta ttgatgttga gtaatggctt tactcctgta 7920
atgttatctt agtcttcaat tttggactgt aatctgcaga taatgtgaga ataaggataa 7980
cccctaaagg tatgcccttt ggcaaatgtt tgcttataat acatcccttc tttttcaagc 8040
atcccggaac cacttccttt ggaatgtctt catttaacct gagtaatgcc atcatgggca 8100
gtgggatcct gggcttgtcc tatgccatgg ccaacacagg gatcatactt tttatgtaag 8160
tgaatgtata tgtctacatt tggtgatgaa gtccatgcat acctggtggc ttttttcaatt 8220
aacaatctca agtttgatct ttgtgaacgt gaagactcag aggaggctaa tcatggcact 8280
tggtcaccca accatcccta acccaacggc agaaagtgta tgtgctcaat caaccaaagt 8340
gctggagcag cctcgccaga agaattttgt tattcagtaa atacttgaaa taatttggtg 8400
tttagcaacc aaaaagatct ttcccagaag caaatctgat tttatctcat tcttaggaaa 8460
gaagcaacca agcctaagag ccctgcatgc ccttgcctac cttatgtccc attccctgta 8520
```

5

```
cccctgtgcg acagatacac tgggcacaat agccttctct ccatcctatg aagatgccac 8580
attccctctc accattggac ctttgcacat ggtcttggaa ccctcttctc ttccttcttc 8640
atctagttaa ctcctcatat gtcagttcag tctcacctga atactgcgcg ccctgatctc 8700
catgactggg gcaaatcacc ttatcataac actcaccaca attttaatgt tttagtgcca 8760
tttgtctgat tcatttggtt aatatctgtc cctcttgctg gactataagc tctagaaagt 8820
tgagcccatg tctgtttttta ctcaccaatg tctctacctc caaacctaga gcagtgcctg 8880
gtacaggcaa tatttgttga gtgaccaaac cttattccta aacctacgta cttttcaccaa 8940
acttgttcaa atgctgccta agggtagcag catctggtag ttgacctgta gggtggatac 9000
tgcactgtct atgacagaca acaacagacg tttatgtgca tcatgtacag cctggcattt 9060
tccaggatat agttggcagc agtggaattc ttcacaagaa taaagtctga tgttaggcac 9120
cactgtggac acagatccta atcccaaatg caacgctaga gagttaaata actgtctaag 9180
aatgcaacat ttatatcaca aatatgtgct gtttatgttc tgaatatcac atatgattag 9240
taatcacaca gctatttgag ggctaagcat caggactata aatatttgta ttgtgttagt 9300
gctttgattg aactctttta tgtataatat tcttcagctg aatgggtttt tatatcaact 9360
ttacttttat ataagccatg ttttgaaata aactaggatt ttaataatct gaattttaat 9420
agctatgtat gtagtcatat atttgtatgc ttttgtaatg tgcttacctc taagacaaaa 9480
aaacctgcct ttccttatta attatacata ccattaaaat gaattaggaa gttacagatc 9540
actgatgaat agaaatagga aaaacttccc ccaatcccac agtcatagat catcttcatg 9600
agagaagaat gttccacttt ttaaaatgag ggcctcattt taggcttata aacacttagc 9660
agatgaattt ggtcagaaca attaaatcac taaacatcat ggggtgtgtt ttgtgtgtct 9720
aagtagccca gactggatta agctttctct cttaatttat agcaagtgac acagtatttt 9780
aaaggtttta ctcttagtat tttctgccag agaaagtaca tgtttagaat acagggaatg 9840
ctcattattt ttccagggaa caaaattata taatctgaat tacattattc cttaaaaaca 9900
gttaagttca taaggcatat ggaaaaatat aggaataagt cattggttag acagttctgg 9960
caaacatact ctatggaaaa taagagtgca acatagctac aggggttata aaatttataa 10020
ttcatggtcc aaatgtacat ttgtagtatt gatttcattg ggaattacca agggattaga 10080
tcaattgtgg ggaaagtgta ttttttaaaa ataaacaaag ataaagattt tttttctgaa 10140
ttccaggtaa aaggcagcat tgctcctcca tttattacgt agatgcttct atcaacattc 10200
ttattttgt gctccaaatc ttggatttgg aaaaatacca atccgtataa acataaagaa 10260
accatacatg catgtgggga tcctaacacc agaaatgact ctgaatgcaa aaaaaaaaaa 10320
aaaaaaaaaa gggaattttc gtgccccatc cttagctttc tctgctttct ctattatata 10380
tgcaactgcc tgcccctcta tcttacaaag tacttcgtaa tctaatgcac aggatcagca 10440
gtaatgcagc tcagactgca tgctttcgcc tttggattcc tagatttcag attaaggttt 10500
agtcaggcta ttgaatagcc cttcaattct aagtgctgat gtgaatatca tgcaaatatg 10560
atgtacatat tcccatgtgc tgagtaagta gatgtagcat ttgctaatgt tgctatacat 10620
ttagcatcta agttatgaac cagattctac cactgggtaa cattaaaaaa aagttaggga 10680
cttcaggtat gtaaaatata gcaaattcta tttctacgac tttaaagggt atgtgtagag 10740
ttctgaaaag aatttctcag cctcccccaa atccacatac ttttggaaag ctgatgattg 10800
aaaagattaa tgtgatcctt tattgtaaca tctaacataa ttacatttta tttattgtag 10860
aaactttatt acctactctc tcttcccttt gcagaatcat gctgcttgct gtggcaatat 10920
tatcactgta ttcagttcac cttttattaa aaacagccaa ggaaggaggt atgctaccac 10980
ttgagtccaa cacattctat tttaattctc ataaaagagt atttcagtct gttgcttcat 11040
aaccttagga tgattatagt cagtttcaca tttcattttc ttctgagccc agtgacacga 11100
tctctcagtg tttatagttg tttgggcaag tgagaggcag gagtgaaagt caactggctc 11160
aggttcaaga caaatagaaa aagaaattt ctgatatatg atagaaataa ctgttttgac 11220
ttgctacatg cagctaaaat aaataaaacc attgattctt gtttggagaa cattttgata 11280
tattgcttat tggttttga ggttgcatct tttgggctta taatttctat atgatgttta 11340
tttacatgtt tgagactcca gcatggaatt atatgacaaa aatattttag tcattaaaac 11400
aatctcttta acaaggctat tttatctttg attgtagggt ctttgattta tgaaaaatta 11460
ggagaaaagg catttggatg gccgggaaaa attggagctt ttgtttccat tacaatgcag 11520
aacattggag gtaaggggat atactttcca atggatccca taaactttct atagcgtgtt 11580
caataaataa gaaaacttat ggcaataaac aggcacttta gatacagaaa aattgctact 11640
tatagttctt aaattttaaa atgatagttt cttaaatagg tttgtgtcct gctttaatta 11700
aaaacagcaa tatctaagaa tgaaataaca tataaaccc tgccaattga attctagaat 11760
taaaatataa aataaaagct ttcttgattt ttaatgttat tatagcatga attattactc 11820
ttaaaaattg aagaatttgt gcttatatct gtcattgaca aaacagttga cgttttctat 11880
gtgtgactga gttcgattta ctaaactgaa aagtgggtgt ctgggggaac atagccaaat 11940
```

6

```
gctgtggtcc ttgaaacgca gcctgcactg agccagccca ctagacagtg tctctggaag 12000
tttactaagg caaaagtctg gctaggcatc aaatgcacta taaaccccgg tttgttgatt 12060
ctatggattc ttataattcc cactgaatta tcatttccag tgtaggacct agaaatatat 12120
atatatattt ttaacaatgt tctctcgttg gtgtgtttgc ccaccagctt catactgttt 12180
ctgttgtgtc tttggccctc agaaggcatc caaacccata tttcagatgt cctgccggct 12240
gcttcctggc acatggcccc agccatctcc ccacataatg acacttactc cctcacctcc 12300
tacccagtcc ctaaacctgc tattctattt ctctgatctt tcttttctca gtgaatacca 12360
ccagcagtca tccagtttct gagggcagaa atctggatgt cagcgtaaat gtttcctttt 12420
ccccaactct gcatgtccaa tcaaatggca aagtctgttc atttgatctc ttacttatct 12480
cttgaacctc tcctctctgt ccgtcctcat gaccacagat gatcaccatt tatagctcag 12540
actattgcag tagtcttcta actggtcttc ctggcttgag tttcccctgc tctcagataa 12600
actctaattt gttctccaga taaactttct caaatttgag tctgtttcta cttttgtcgt 12660
gcataaaatt cttcagcatg cctttattat tttcaaggaa aaacttaaac tcattggact 12720
gacacaagat cttcgtctag ttcttctgct caatctttct aaactttcct agcaatgccc 12780
atatctatct atctttatct atctatctat ctatctatct atctatctat ctatctatct 12840
atcatctatc aatttatcca tcatctatac cctacatgtc ctgtgtcaaa ccataacaaa 12900
ttatatttat tcccctaaca gtactatttt aatattttta aaaatcatcc atgccttctt 12960
ttcacaggct actttctccc cttgactgtc tctcaaagtc ctccaaccct aacacacacg 13020
cacacacaca cacacacaca cacacacaca cacacatt ttctctctca ctctgctcac 13080
ctggtctatt gctcctctag actggtaaat actagttcct ctgggctctc atggtcctgt 13140
ttgtatctag tatgttactg ttttctaaag gatattttaa aacacttgag tagagaataa 13200
gcttttggag tctgatggac ctgaatttga gtctgtttct gtcactatct gtgaacttgg 13260
gaagatcact gtactccttt gtctgatttt ttcatgtata aaaattacct tacaaaggct 13320
attgtgagga tgaaataagg taacatatgg cacataataa gtgttctgta tatgcttctc 13380
tcctccctgg ttctctgctt ccatatccat gtctctggag ttgcctgaat tatttttaa 13440
ataggcattt aaaaaattat aaaacaaata tatgatgatt gtgaaaaact aaaacactgc 13500
ataaatatat aaaattaccaa gaaaagttta tgtcagtcat cctcagaaat aactactcat 13560
aggttttccc ctatgcctaa ttcaacaaat acattgaata ttgttagtat tggatcatct 13620
tatgataccg attttcagct ttcttttaa atttaacaat atgccttgaa tatatttgca 13680
tgttattctt tttaatgatt tttgaggttt ccattacaca aatgtgccat aatttgttta 13740
cagtatcctt attgatgaac agttggattg tttctaattt ttcactgtta taaaaatgct 13800
acagtaaata cacttgcaca gagatcttgc aaacaggcaa cccatttaa taaataaatt 13860
cactggagtt atcaaggatt tctggaatgc agaaatttct ttagtaatct atctaactat 13920
actcaccctg ataatggata gttggtaagc agataagtaa aattcagcca tatcttatga 13980
tttgtgttaa aaaaatttt atatgttaag actacaatct tgggtagaat ttgacagtaa 14040
tatcaaaatt gtctcattca ttttactggt ttggagccat atgcatatta gcccccccaaa 14100
tcccaacaaa tagaccactt tacatttgtt tcaaactctc agccttatca aggtttaaag 14160
tatcgagcat ttcataggat tgccttatag ttggtctaat ttaacaactg aaataaccag 14220
gcataagcat aattaaccct ggactcaaga agttgagtgg cagcacctca gctgtggttc 14280
aaagcatagc cactactacg cttctaaaca atggaataaa gtataaagcg gtctctcagt 14340
caagcctcac acaggtaaga ggcgtgactt taagggagta agatgaaata tcgtaacatc 14400
accccagaaa taatgctctc actttggtta ctttatttga ttagttgata tttggcataa 14460
gagaaatcac ttgtatttct ctatttaaca actctacatt tagaacactt aattttctca 14520
atccctaaa aaaattaacat ttactgcaga tgttttcaca ttaacagatt aatgtctgga 14580
tcattctgaa tttttgaaga ccaaacatgt taacatcact gacatcactg aaaaccagca 14640
attaatagct gtaacattga atggtacctc accaagccag ctaatcagaa atatctcctg 14700
tgttcacact ctgtaagatt tagctttagc caaggtcttt gcaaagatta accaaataat 14760
gtgtacagaa ggtacatccg ctattgtaaa aatcatttca ctttgacagt acagaagaag 14820
caccagccct tctgttttag atgtagtccg tccttttcaa gctgtatgat tgtggacatg 14880
tcaacttaac atctcggagt ttttatatct tcatcagtgg aatgagaata acaacatata 14940
tcttgtcatc tcacagggtt tttcagatga tcaaatgaag taatgtgcag aactaaccaa 15000
tgtggggaat tattatcatc actgttactt tcatatgaag tgaagaaaat attttaaac 15060
tcagtagttt aatttacaat ttaagtatgt gtttttaaagt gcctgttagc aaaaattcac 15120
tagaaggatg taggacacac ttaaagtttt catgtaaaat ttgtgagttc tatttttaac 15180
tgaatctttt ggccatgtgt caacaaatta acgttatcct tcaccaaatg ggtgggcttg 15240
aaaaaggcgt gatgcataaa tatttacagt tgtaggcaaa attgtaatgt tatgtatatg 15300
aatacatatt catttttttca gggagaaggc ttgtagattt catcaagaaa tctttcacaa 15360
```

7

```
gagtagataa tcattcatgt atcacttacc tagatgctca tgaaattttg ccactttata 15420
taattcctta gttagccaaa aggagagtaa gatgaagagg ggggaaaaaa aaaacttctt 15480
tgacaaagat ggagagaagc tgtcatctct tgtattcttt tatcaatcca ggaagccttt 15540
ggttttgaca ataagtggtc tgagactttg tgtactcctc agataggtcc cggaggacta 15600
gattggtgcc catctgcaga aaaccagagg ggatatattg actctgcaga tctgcccttt 15660
gattctgcca tctctcagct ggcccatgcc ttttgttgcc agactactgc ccaagttata 15720
gacactaaca caggcacact gagtatgggc tatgttgatt tataactaat gagggcagaa 15780
ccttagaact gcagcttcac tgtaaacttt ggagcaggat ttaacacaga atcagccctg 15840
atactgttaa caaaggtcca cctgaaagag ctggaaggtc aaatgtctat cttggaagag 15900
aacttggaag cagtgccaaa tacacaatga cttttttttc catttggggg attagatgtt 15960
catcttacat atcccaaatg tcataacttg cttgcatgtg acttcagtac tgtccacacc 16020
attaagctgt cacattttcc attttagcaa tgtcaagcta cctctttatc attaaatatg 16080
aactacctga agtaatcaga gcattcatgg gacttgaaga aaatactggg tatgtcttat 16140
gctccctctg tgacatcaag tgactcattc tacttggtct tttctgattc taatatccct 16200
gtctctcact tctagagaat ggtacctcaa tggcaactac ctcatcatat ttgtgtctgt 16260
tggaattatt cttccacttt cgctccttaa aaatttaggt aaagatattt tctaactgga 16320
aatatttta ttttttattc acatttaaat aggttagcta attgtagatg ccatattcac 16380
cttccaaaat gcttcttcta acttctaggt tatcttggct ataccagtgg attttctctt 16440
acctgcatgg tgttttttgt tagtgtggta agtgatgtga tgacatgatc cttgcaggtt 16500
ggttagcatg agtttttttg tgcctaaatt agtgtcctca ttttgttcaa gcacttcact 16560
aatatgaaat agttcttgta tcacaagtga ttttcttgta gactaattta gagcaaaaaa 16620
agagcagcta cgatttaaag atagttgagg tagaatatca aagctactac taatggtttg 16680
gtctaggcac actggttata tatgggggaaa aaaggaaaac ttcaagcagg aacatgacaa 16740
taatctggca tttagaacag cagaggagag tcccagatga gaaacaagaa ggctatatcc 16800
atattcacat gaatcagcca ttctctctta cacattccac ccattaagag aggacaagaa 16860
cagtgggatt aaagaagaaa tcctcctctc taggcccctg acaaaagagg gaatttcttg 16920
cactatcatg aatgccaaaa tttataaagc atttccccaa agaggtaaag gagaaggaaa 16980
aaaagttttg aagacccatg tcaccttagt ttgaagaaat aaggaaatga tcatctttct 17040
catggaaggg catgaaagag ggtgggaagg attcttgcaa aatattgtcc tgttaactct 17100
aagaggcagg gctgccaatc acagctccaa ctcttccctt agaacagagg ctagaggaag 17160
tttactttgt ccattagtct aaaaggaatc cctaactgag ttccctcacc ccccacccta 17220
taagccacac atatggattc ttatttcatt gttttttctc aaaaagctga tttttttttc 17280
ttttttaatg actgagtcta ggtgatttac aagaaattcc aaataccctg ccctctacct 17340
gttttggatc acagtgttgg aaatctgtca ttcaacaaca cgcttccaat gcatgtggta 17400
atgttaccca acaactctga gagttctgat gtgaacttca tgatggatta cacccaccgc 17460
aatcctgcag ggctggatga gaaccaggcc aagggctctc ttcatgacag tggagtagaa 17520
tatgaagctc atagtgatga caagtgtgaa cccaaatact ttgtattcaa ctcccgggta 17580
agtgagcggt ccgggcttct aatgagtaca gttatgtgtt ttctaagttt ttattcaata 17640
aactgagatg gcctgagatc accatctatg ttggaatgct aaacacgtgg tgttgtcttt 17700
gtttttcaga cggcctatgc aattcctatc ctagtatttg cttttgtatg ccaccctgag 17760
gtccttccca tctacagtga acttaaagag taaggcagcc atcattttag cattctaatt 17820
tgctttgaaa ttctgctcat atgttcaaag attctttaac aggaaacaca gtttatagct 17880
tcctcttcag agaaaatatg tactccatcc actcctcagt aacatgcttt aatcagaaag 17940
gtgggaatca gcccaccaca gcactacctt atcttctttc tctccttttct ctccaccata 18000
atggttcagg ggaggggttc atggcaggtg gacaaggagt cgatggttgt aataattttg 18060
gcaggtgttg ggaatttaaa tttgaatttt gttcggaaga aatgatgtca gctggactag 18120
aaatgaaaac acccatgacg accaaaactt atggttaggg gcagcctcga taagccagtg 18180
atgtcattta tagtcagcac ctaacccttg tctagaacac attcattaca agagatgtgt 18240
caatatctgt cctttgttgt cttatttgta caatagagtc actggctaga aaatcttgtt 18300
tcttccagct gatggtctat ggttcatttg tattcttttc cctttgaagt tgttgatatt 18360
tgcttgggaa caaaggatat gaactcatta tagctgtttt cctctttcct ttaagggagg 18420
atattatata ataattctca acttctttaa tctagacatc agtaacctca gtcttcattc 18480
tcactaaata gcaaaacttt ccccataaat tctgatttac ctcataaaaa atttcagaac 18540
actttcaagt attttgatgt ctttgattta ctttgaaaat tacatgtagc agttactcca 18600
gaagcctgac aattgatctt tggcagccag gttccttcta gaatggtttt cagaagcttt 18660
tcaggtagtc tggactcctg gcagtagtac tttgctgact ctactaggtt cttttcctca 18720
tttaaagtca tctcattatg aaatgcaaaa gctttctatg ttaggagcct gtttcatctt 18780
```

8

```
tatgttaatt atattcttat tcagtgggca agcttactga cctacgtgaa atagactgtt 18840
cctcttctag ggaaatgatt gtttttaaga ctgaaggact agtgtttaag aaaaatggaa 18900
atgaatcctc attagctctc taagacaaat ttaaatcagc tataagttta tgtactaaat 18960
atgtcttcat gattagcaat atagatatac tttttttatta ttattttcat tttgaaaagt 19020
gatttttttt tgtaagttta aaaaacaaag cttggtgttc tttctttttc cagtcggtcc 19080
cggagaaaaa tgcaaacggt gtcaaatatt tccatcacgg ggatgcttgt catgtacctg 19140
cttgccgccc tctttggtta cctaaccttc tatggtaggt cactctgaaa gtcattctct 19200
atatgcaaat ccttgttagg ctggtccttg acctgggtag gtatgatttt taaaaattgc 19260
cttctataag catgctctat agatgacaca tattcaatta atatactatt ttagttttgt 19320
cacttgacct gaggaaatgg ggcctgattc agcctggcta acaagttaca agaatttgtg 19380
aattaacacc tattttataa aaaatatccc tcaaacaaaa ttattttcct ctagggatag 19440
atgatatttc tctggctaga ctccatagtc caactcaggc tacaagtgat gagaatgaat 19500
ccacttgcat gtgataaagc tcctttgatg gaattattaa ctgccacaca aatagcaggg 19560
aaactgccag gtcctcaagt ttgaatttgc ctcctcttta ccagtcaagt caaatctggg 19620
agcttgggac tttaggtaaa atttctgaca tatcccattc tattttgtta tactaaatga 19680
tttcctaaga aagaggacat gacagaattt ccttcaatct aagaatgcac caccaaaaaa 19740
aagtgactat ggccacatta gattatgcct gcaacatttc ctctctggca tcttaacagt 19800
tcacaaaggg agtaggattg tactccttcc atgaagtgtg gccacataaa cagatttcat 19860
ggaatcacat attgacctgg tagcatatgt ttacatgaat cagtgtatca atataaatat 19920
atttttgtat aaacctcctt ttaaagtttt taacttaatt ttttttcttac tgacttggta 19980
aattgaattg catgtatgac aaaattgtgga ggaaaagatt caggagtagg ccaccatttg 20040
cttaggtttt ttttctattt gactaatatt tgactattaa ccaaacatgt gctttagatt 20100
gggcattaac ttttttgccgg ttgtgaaata atgaatgacg aggtcaatac tactgaaggt 20160
attttcacta ctttttgtct gatcttgagg tgaaaatcca actacgcttg attccataga 20220
tattttcttg ttatttgtgc ttggagtcct gaatgaaggt gtttttcaagt agggctgcat 20280
cttcgtctta gagtagtacc cactgggaga ccatctaaaa attatactaa tttatccctg 20340
cacgttactt atacttattt taatgagttt cataagacaa gcaaaaactt gaaagagccc 20400
aaaaatatct gttttagtgt ggtgatggag tcatagttgt tgagcttgaa aaaatggtag 20460
caatcattca tcctagagtt tacacactgg gtttgtaacc tgcatcagga gtggctgcac 20520
aggtagggac aggggaggtg gtaggctggg agagacaata tgtggggctt gggtctctca 20580
tcccccttcaa caagagcacc ttggtctctg tctgatttgt aattgcttct gtacagcgga 20640
gatagattta tcacaatgta aatgagcttg agaggctctt tattttgtat tataccttct 20700
gcaacgttat cagcttcagg acctctttgt tcatttgaat gaaggttgca tagctaatga 20760
gctcagaggc aagaccagag gtgcctggat tcccaggcct aggtcttttc ctctgttctg 20820
tgttctctct ataaaatgtt gccataagtg acctgtgctg atttgacaac accaagcggt 20880
ttcattctct ttttcctgtt gtaggagaag ttgaagatga attacttcat gcctacagca 20940
aagtgtatac attagacatc cctcttctca tggttcgcct ggcagtcctt gtggcagtaa 21000
cactaactgt gcccattgtc ctcttcccag taagtacata agactttgat gaaagaaacc 21060
tacttgaccc cataaattag tacatgtgtt ctaccttcat tttgatttaa ttataggggtg 21120
agtttgcaat tgcaatgcct gaggatatta ttttcctata gcattttgag tcacttaaaa 21180
ttggccattt aatgtgtaga tagagcaagt agtttcaggt ggtattttta tagtgtagga 21240
aaaaaatcat aaaacttatt tttaaactca aagttgaaaa gtggagctgg agcttctgtc 21300
ttgtggatta gtaaaactga gtaggagttc atataacttt ggaaccttga aagccaaaac 21360
catattaact ttcaaatctt attaaatttc atcacagttt tgaaggcatt tcattttttt 21420
tccagtttgt tgtgctgcaa taatatacaa aagttgcctt ttttaacctg atgccttgaa 21480
ggctaatgaa aaggggattc atgttaagta aattatatac cagaaaaaaa tttttcaaaa 21540
aacagttatg ctatctatca catatctctc tcacacatgg cctctgccag actcacacca 21600
ggtcacccct ccctggcatt tgtcattggt gtcagtttgt tctgagatcc cagagcagag 21660
ctggtagtga agatttgggc tgtgtgagtt aaaaccacca cctaaggata aacacaggtc 21720
ttcaccctcc tgccagctcc tgtttcataa acactgaatt tactcattca tttgaggggg 21780
aaaaaaataa gtgacacagt aaccagcact gtcctggaca taatgttcca tacagggctg 21840
gcatatgaag actatttcta taatgacact gtggtcactt aaaatgcagc ttgtgtgctg 21900
aaatatattt tggcacattc cttttcatg agtgcatgaa atcagatccg tactactatg 21960
gtggctaata ttttactctt aaatcatgtc ttgcctctaa tatatctgaa agtatttcag 22020
atgacataca catagcttta gcctaaaatc agctccgtct tgggtacaag acagaagaca 22080
actataaaca gaaggtatac gataggggtaa aattgccagg caaacaactt cactgagaaa 22140
aggatatctg gagcccttct ttttatgtgt aaaaaaatca ctcactaaat tttggcacag 22200
```

9

```
tgtaagcatt cacatcattg tagaatcaaa gcataagaaa tctgtgatgt gcttctgtat 22260
tgctttattc atattcatat agtgttttca agccatggtt ttaagggatt gccagaattg 22320
gccatcgtca cacagacagc tggtaacagt tcaactagtg cagctcatag cccaacactg 22380
agggctgcaa ttattgtcat gggaagtaaa agtcatttac tgatgaacat ttcacctcag 22440
catggaaaat ccaaatctcc ccttagaaat tcttacccta tgtgagaaat aaagcactga 22500
tataaatctg accatcagga acagcaatag tgtgtaaaca ttagatgcca ttagaaccaa 22560
aattgaccat aagaaccaga gttcagaaaa atgactaact gctgtccttc attatgtatt 22620
tccactcaac attagcattt atgaaacatt ttgcacatta tcctgtcctc acccttgcaa 22680
tgttacattt atataatctg tgtaagtgct ccactgcccc acagagtcat aagtccctgg 22740
gacttggtga tgtgcacagt gactggcaca gagggtgagc tctgtcgtgc ttgggaagaa 22800
aaatggtctt caaatgaatc ttgccttgtc ttgaaatgta taaactgcct tttctagcaa 22860
aagcatagac actctttccc ttggtgacat gtgctacgaa ttcagctggg ttgaggatct 22920
gggctaaatg aaccaaacct ccctatacat gaaggataca cagagatggt gacagagagt 22980
ggtcacttcc gtgagtggat ctcaatcaag tcctctgaag ctaaattcaa ttttttttct 23040
ttactaaaat gataaaagtt gttattggcg cttttgcttg tttatttcgt ataacttagg 23100
gctcagattt tcaatgtgtc aaatgctgac tcacagcatg gttctcctga cagtttattt 23160
catttaagga actcttcacc agtaagttta tttacttgcc ttgatatctc cacacattaa 23220
taataaaact aacaaaacct aatctgaatt aaaatctatc agctttaggc attattttgt 23280
gttctccttc tttcaacatg gtaactgggc tctctttctt aggagcttga gaagatatga 23340
ctggggtttg ttttttctcta cttcatttat tatctttctt ttttccaatc aggttagttt 23400
tttccttttt agtaaaaggt gcatagtaac tgcttgtagt atttgttgaa caagtgaata 23460
aatgaaatga attaaggtag tgttttcact agcagcccaa catttctttc tctcttagta 23520
gtgggtgggg tatcagttat ggaatggcac ctccttccag aggactgatc atgtcatttt 23580
cagcttatgc ttccctttat gcagtaaagt ttccatattt ccataaagaa caagaaacca 23640
aataatccta atggatatat aatgaacaca cagatgaaaa tttcacctgc catgcctttg 23700
aaaaaagatc cctagctact tgtatttcat cttataatta aaatcagtct tttcacttat 23760
gttttcttca gatctcctgt tttgaagtgt atatagatat caacatagaa atgcagcgta 23820
tattgctatc aactgcagtg gagcagtgat tcgtaggttt tccaacatcc ttgccttaag 23880
caaacctgca aaatcaaagt gtgagctacg tctaaacaat gggagaggct tttttttttt 23940
ttttaagagt tagaactaag actctcactt cctcctgtgc ctccacattt ttgaccttca 24000
cattgggccc ctgcatcaga atacagcacc ccctaacagg ctcctgttca ggactctttc 24060
tctggaaata acagatgttg tctctagagc tgcatagaac cttaatggaa tcattgtggg 24120
tcagaggccc tggatggtgc tggggacctc cctgacccac agcatctgac ccacatttcc 24180
aggttcctag cgacttgtgt cagtaaagaa aaaggcacat agctaagtgg aagagcagat 24240
gaggcttggt gggaatcagc cagtggtctg ccctagcaaa ggtaaacaga actgctgggg 24300
gcttttggtc ctaggctcac tactcaggga ggcactttaa catggaatga ccagcaagtt 24360
tccttcctga tcttttccac caccaccaca agcctagtac ctccctccct cttngctctg 24420
ttgctctctt cgggaatgca ctggaaacca ccttcagttc tgtttggaat tttcctattc 24480
cttattcaga aagaggaaga agcttttgca tttactccaa ccgttctacc tattattccc 24540
ataaactttc tgtgatctca tatcattagg ccaaatgtta atctttctgg gagccaggag 24600
actgctttca cattcagagg ccctggacat ataggactgc ctctaactca ctctaactca 24660
gcttattgac ttgaatgcac ctttttaaca agtgactaaa aaacaaactg tgactattct 24720
ctgaaaatga gcctatatct catacttatt tattctgttt aacactgtga aacaaattaa 24780
gtcctctggc actatgtata taccataaaa agcttatttg taagcctact aattggacca 24840
gttttgacaa tattgaataa gcactaattg cagatcataa tgtagaatta taggctgctg 24900
aggaaaacaa tatcacacca tttgctttcc tcagtttcct tttcagaatg agtttcataa 24960
tgttcactaa tccaattttt aaaatccttt acaaagttat tcttaaacta tttccagaga 25020
ctatctggtt tgtcattcta gaaatgaaat tgccttttca gcctaaacag atggccttaa 25080
tttttggtgg agtggtatga aaggaatgtc acatgagaaa ctgcaagcta tttagcttga 25140
atttttttgtc attcatacat gtttcaaaat atattttaca ttttctctct tttaaatgag 25200
ttcccatctc tgcaccttaa gtgacttcag aactaaaatt ttaaagtgaa catcaatcac 25260
agcatttcca aaaatgtgaa ctcctagctt aaccgaagta ttcacttatt ggaaagctga 25320
tagagtaatt ccactaagtc caaaaagtgt cctctaaaag attccaaaga taagagtgtt 25380
ttcaactttg tcaagctgta caaacacaaa tgtcactccc tccctctgcc cacagggatc 25440
tttatccagt tacagcagcg taacttgagc agctgctgca aactgaggct ctcttgaccc 25500
ttcgcctact tatttcagct gctaaaatag ggctgaaatc tgtcaaggat cctgaaggga 25560
aggataagat tcctactatt caatttaatt taagctttta ttcagtgcct gctgtgtgca 25620
```

```
caacactaag ctagaaagtc tgaggaatgt ttagattatt aggtcctgtt ccttgccttt 25680
catagattta caatctattg atagggagag ctaaaaagga gagaaagagg aaggagcaaa 25740
cataaaaacg tcaaaatttt aaaataccat tttaaaattt tattttaaaa tgttaaatac 25800
catgcaaaat taaggaaaac ctagattcat aaaaaattcct ttcacaatct tgtgtaaatc 25860
aattcagtgc ttgcccttaa tgtctcatcc agtctgatga gacatgtttt gtgatcaaca 25920
agggtttttac tatgtttctt aattatgtgt cttgcctgtt atctctttct gaccgagatt 25980
attttttaaca ataaattctg aaaactaaga aagtgaaagc ataaaatatt gtcttataaa 26040
atacgccaag gaaaaaatga cactccattt caaatatcaa aagttagcat caagactgca 26100
caagatgaat gtacagtcat gtgttgctta caaatgtgga catattctga gaaatgcatc 26160
tttaggcaat tttgtcattg tgcaaacacc atagattgta cttgcagcct aattggtgga 26220
gcctactata cactaaggct atatggcata gcctagtact cctaggctac aaacctgtac 26280
agcatgttac tgtactgaat agtggaggta cctgtaacat aatggtaagt atttgtgtct 26340
ccaaacgtag aaaagctact gtaaaaatac agtattacaa ccttagggta tcactgtctt 26400
atatgtggtc tgttgttgac cgaaatgact atgcttaata ccactgaact gtacacttaa 26460
aaatggttaa gatggtaaat tctatgttat gtatgtttta taataataaa aaaattgaaa 26520
aaagcatcaa catcttttct gggaaaaaag aaaaagaaag aaaatgcatt agagtgatga 26580
gaatatttga agtaatagat aaagtcaaaa acaaagaaat gatcttgcct ttgaactttc 26640
ttgtttaaga ttcgtacatc agtgatcaca ctgttatttc ccaaacgacc cttcagctgg 26700
atacgacatt tcctgattgc agctgtgctt attgcactta ataatgttct ggtcatcctt 26760
gtgccaacta taaaatacat cttcggattc ataggtgagt ttcagaaagg cttcaatttg 26820
gtcaacccaa actcacgcct cattaaatga tggacaggga accagtgctg ggtcatccag 26880
atccccgttc tttctcaggc tcatggattc cctttatccc tgcgaggctc tggtgattga 26940
gctgctcact gtctcttcct cctaactgac actgggagcc accttatagg tcatttagtc 27000
aagctgcttt ttctgataga tgaggaaact gacccctata aaagtcaagt catatacctt 27060
ggtgtggacc caggatttgg acttaggtat tagctccacc atcaggaaaa gaggaagata 27120
gattttacct gccagaagct ctctgatact acgagtatca gctgaacatt gaaaggtatc 27180
ttcagaggaa taggaggttg attatataaa gtgtattatt agtatttccc cataactgca 27240
tggtctatta attttcattc tactcattga gggtttactt aaactttaaa cacaatctaa 27300
aactttaaaa gaaccatggg taggtcactt gcaaagtaag aggtggatag ggtgtgtcat 27360
gagttcagcc accttagtat gtatttatat tactaatccc ctgtaaattt gtgttaaatt 27420
cagccttttg ttgcttatta tatgttgcat atacttatgc agctttgatg ttaggtacat 27480
tttaattgtc tctataaaca tatcttctat gaataaataa ccaagatgag cttatgtgac 27540
ttaagtgtgt gtttttagtg ctaagtatag gatagcttta tatttggttt atttaaagtg 27600
tgtgctggca tctcctttgc taggaactgc tgggtaagac attgaccttg ccctgtgttt 27660
gtcttctcag gggcttcttc tgccactatg ctgatttta ttcttccagc agttttttat 27720
cttaaacttg tcaagaaaga aacttttagg tcaccccaaa aggtcggggt aagtaaacct 27780
tgcaatttcc cccattatta gttgttcttc caactactta gaataaacta gaaaatacac 27840
atagttcaga aaaatgaatc aatgtacaag aaccaaaaat caaaaatggg ctagaacttt 27900
ctggtagcag agaaaggga catatttctg aaactcaaat gattctactt caaatatcaa 27960
atatcctgtg ttgagtctgt catacatgtc aaatagtagt agcctttccc acagacacat 28020
atgcttcagg caaatagcag tgtccaatac caagctgctg ttgtgctatc cgtggaaaat 28080
catgcaagaa ggaattaggc tccctagcgg tgttatggaa taatttaaat attttggtca 28140
tggttgttag gtttgcaaag ccaaaggaaa gatgttgctt ttgtttttccc ttccatagta 28200
cctgttgtcc ctggtgtgga ctaagatcca gaacagaacc attcatcgtt ctgttaacct 28260
ctttagatac aaaatacagt cttattaaat tagagagtac atatttcttt tccataagac 28320
tactatagaa acaaatgcta gaaataattg ttttttccaat aaggaaatat tatctttcac 28380
tccttaataa agtcatgtta aggcttgaaa agaatatttc ttactgaatt actctgaatt 28440
tttaccttga agtcatttac ctttgggatg ttctggggac ttcaggataa tttggtatca 28500
aaaggtccac ccagcagctt gctcccaaat tttaactcta tgtagtccgt cttgcttgga 28560
tttttacagc agtgtgacct tggcaaatta cttgtcctgt ttgtgaccta ttttcagttt 28620
gaccaattgt gaaatgagta caattatctc ctagacccat tctagtgaaa aatgtttagt 28680
tgctgctttc ttatatgtag gattaggagg tttaagtatg tgataaaatg taaggcctct 28740
tctggtgtta aaatgctgaa gtattttata tgtaggtatg tacatatatc cttatatatg 28800
tgtgtgtata ttatatgtat gcacacacac acacacatat atacacttt tgttgcaaca 28860
tctattaagc ttttggtttt gtttgcttta taaaattaga atcatatcat atatgctatt 28920
cttttttaac ctgctctttt tcacctaaaa gattgtaagc attctctaga ttattgaatc 28980
ttttctgtc ccttgatttt taataatcac agggtattcc atcatcttgg tgtactaaat 29040
```

```
caattaacta ttactccatt gttgaacctg taggttgtat ctctccactg tattcctctt 29100
ctttcttcaa ctaggattct aaattgactg ataggttagg cctgggcatc tgagatatta 29160
agaataatat ggctcaatat atagatcaga ttgccatatt atgtaaacaa ctaaaaaaca 29220
aattgtacta agtatggttt ctgtgctcct aacagagtct ctctgaatta caggctttaa 29280
ttttccttgt ggttggaata ttcttcatga ttggaagcat ggcactcatt ataattgact 29340
ggatttatga tcctccaaat tccaagcatc actaacacaa ggaaaaatac tttctttttc 29400
tattggaaat ggttacaagt tatactccaa aagatatttg aattatcttg attggaatgt 29460
tattcatagg aaataacagg aagattccaa agacgtttac cagtaatatc accaggcacc 29520
tgcagaagag gaaaatcact gtttttgtca aggatggttg tgtatgtgtt taaaataaaa 29580
cctgtggtgc acatttctac ccaggttttg ctagagcagt gtgagatgat gaaggtgtat 29640
ttttgctgct ttacgagcag aataagggta actgcatgta acaatcatca gatagtactc 29700
tttcccctgc cgtctcctca tcctgcaccc cctaaaaaag taccaaacat ttgcattctc 29760
agaacatcaa acaaaaatgc cctggtggca aagctatcac catttaatgt cttctctcag 29820
tcttgcacca aagtctctgg tctgtttact aacagaggca aaaggcatgt cttaggaact 29880
gtttctgttt ctgtaaggta catgaatggt caaacaccag tctagagcat cttattgtca 29940
acagcaaaat aatattttgc ccaccctgtt tgtgacattg agttgtgact tctatattca 30000
atagattttt gtaaatgtta aaacatctat atttaaatgt taaaacacta aatatagaga 30060
ggggctttat ttcaatcata gagcaacaac aaaaataatg cttatagcta aactgcctgt 30120
tctagaaagc atctgctttt tcatgttatt cctaaatcct cttgtcatac ttttgtcatt 30180
gaacaatgct ctccctctcg tcttccatcc tcattcagaa tttttagaag accacaatcg 30240
tggagataca ctacccagta ttgtttgata catttttatt tgataaacat tcagtgcagg 30300
aaactgtgat ttgctatatg tttatgtata taatcttatt ctgtagtcat cagaatgtta 30360
atgtaaggta catttgattt ttatttttta catgtgtagt tttctttctt cacagtcaaa 30420
gcatttatat tattgggggt gggggcaggg aattaagttg gtgggctcga aaatccattc 30480
atatgtatct gtctacaaat gtctggggat aatttaaatt tgaaacctaa gttatatata 30540
gtttggcaat gctcttcttc aatatttaca ataataggat gatctacaag aaaataagtt 30600
tcttttttgca aatttttatc atactaaagt tgttctttta atttagcata tctaaaatag 30660
gaattagttc agtttagctc acacaggtgt ttgctgacat tcattggcca tttaatacag 30720
tgttgagtgg ttctccgtaa aagtataagt gctaacacta cgaagaaatg cacacgatca 30780
ttcttgctca cttctataac aaacttacat aaaatggatt taaaaattcc tactcacagc 30840
ctaaaacttc tggagttcac tacctttttt tcaaatcata gtaagatcac ttgtgtattt 30900
tatattttag taaagccaat tatgaagtac aagtatcata cacgtacttt tgagctacta 30960
ttatttgaaa aaaatctgcc aaatagcatc tttaggatat atttacattt tcactcatct 31020
aaaaagtata caaaaataaa aagtggaaaa aggtatcttc tgaatgttca agagcatcct 31080
atagtgccaa ataataaagc accatttttt tcttcataac caggattaaa attcatatat 31140
actgcagggc agacatacat atgatagctt gtgctgatta atttaacccc atttgtaaac 31200
agatgaaaat tttattttct tatttcattt ataagatggc tcaatgtatt gggaggcttc 31260
tttttttatta cagaaagtgt atattggtat ataataaatg aactttttcaa atgactatga 31320
tgtgattttt gatctattgt taaagaatgt tgtgttattt gtccatgaaa caaaatttaa 31380
aatccaaata ctgtctttct tatattggtt tatgttccat tttcattgtt acctttgaca 31440
cataactaac atctatagcc atcatcctga aaataattgc catcttattt tggcaaaata 31500
gatatttaat cctaaattat tatgatgatt ataattttgg catcacatat ataccaccta 31560
gaatgaatgt ggaagaaatg agtcttttat ggttagtttg aaagaatcca ttgaagatag 31620
aaaatgagag aatagaagaa acctgagaat agtaaaataa agagcagaga aaatatgggg 31680
gcaggaaaa catgtgagtg ctaaggattg attatgaatg aacgattagg gggattgatg 31740
gatcacaggg taagtatatg cttaactta taagaaactt ccacatagtt ttccacagtg 31800
tttctaccat tttcatttcc acccgtacta cctacaactt ccactgactc cacagccctg 31860
ccaacatttg gtgttgtctt ttgcatttta gcctttctag tgggtctgaa atggtaactc 31920
attgtgattt tcatttctgc ttctgtgaca actaatgttg aaaacttttc aagtgtttaa 31980
tggtcactca tatatcttct tttgtgaagt gtgtattcaa atcttttgcc cattttttaaa 32040
atttaggtta tgtgttttta ttgggtattt gtagaagctc tttaaatatg gatccatgtc 32100
cagattgcca atatatttc ccagtctatg gtatggttgc ttattttcct aaaggtgtct 32160
taattacatc tttctggggc caggtcacca tagctcaaag ttttgcaatt tatgtcttaa 32220
tgagataata ttaatcagag tggtatagtc aaaattaaat gttttgatgt cctgggccca 32280
tataggtagg actggatcat ctaaccaaga tgcaaaaaaa aaaaaacaaa aaaacaaaaa 32340
tagtacttgg aaaaacttat tttaaattaa aca                          32373
```

```
<210> 4
<211> 7
<212> PRT
<213> Homo Sapiens

<400> 4
Pro Pro Asn Pro Asp His His
 1               5


<210> 5
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 5
Val His Asn Ala Pro Gly Gly Gly His
 1               5


<210> 6
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 6
Asn Leu Ser Asn
 1


<210> 7
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 7
Asn Leu Ser Phe
 1


<210> 8
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 8
Asn Asn Thr Leu
 1


<210> 9
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 9
Asn Asn Ser Glu
```

1

<210> 10
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 10
Asn Ile Ser Ile
 1

<210> 11
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 11
Lys Lys Glu Thr
 1

<210> 12
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 12
Ser Ser Gly Glu
 1

<210> 13
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 13
Ser Ala Pro Asp
 1

<210> 14
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 14
Thr Ala Lys Glu
 1

<210> 15
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 15
Ser Leu His Asp
 1

<210> 16
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 16
Ser Gly Val Glu
 1

<210> 17
<211> 6
<212> PRT
<213> Homo Sapiens

<400> 17
Gly Leu Ser Tyr Ala Met
 1   5

<210> 18
<211> 6
<212> PRT
<213> Homo Sapiens

<400> 18
Gly Ala Phe Val Ser Ile
 1   5

<210> 19
<211> 6
<212> PRT
<213> Homo Sapiens

<400> 19
Gly Ala Met Ser Ser Tyr
 1   5

<210> 20
<211> 6
<212> PRT
<213> Homo Sapiens

<400> 20
Gly Leu Glu Glu Asn Thr
 1   5

<210> 21

<211> 6
<212> PRT
<213> Homo Sapiens

<400> 21
Gly Leu Asp Glu Asn Gln
 1   5

<210> 22
<211> 6
<212> PRT
<213> Homo Sapiens

<400> 22
Gly Ala Ser Ser Ala Thr
 1   5

<210> 23
<211> 4
<212> PRT
<213> Homo Sapiens

<400> 23
Leu Gly Lys Lys
 1

<210> 24
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 24
acccatatgc atgtcttact tctattctct cttagctttt aacctgcttc ttttcatctt 60
ttatgtatat acatttaggc tgccttatat taataatagt ttcatttttg ttcctcctgc 120
ttaaaacact gtgtgctatt tttttaaatt ctgagaactg ctttctttat ttctagacaa 180
ttctctgcca ttatctcttt ctgttttgtc tcaccctagt ctcacaattc tctatattgg 240
aatgactatc agtgtatatt tgaacttgta attcttattt tttccccatt cctcttaact 300
ycttatttgt attttctttt ttttaatctc ttcatgctat aatttgagtg atttccacag 360
atctgtcttt caattttata agtcttcctt cagctgagtt ttttaaatt tcaatgattc 420
tatttttttc ttttttttaa gaattccttt ttttgactct ttttgcaaca gcctgttctc 480
cttttatatt cctttataat gtttttattc tgtgaaagtt attctcttat tttgaatgtt 540
ttctttcaaa atgtctttct ttttattaat ttaatgtaaa agtcccttt aaattgcttt 600
g   601

<210> 25
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 25
ctgaactttc ttttgttact attcttaact ttggcttcag gatccaagtg cctagaaagt 60
tacttcctaa acttgatcct cacctatgtt gcatattatc aagcatttgg tggtgttaat 120
tctttcatgt ccaattaaat taaagcagta attttctttc tagttattgc tagtagagac 180
actggtagat tctgccttgg tagaccttcc tctgtcaaca atttactttt gtcttccttt 240

```
cttttaaaac atgtatccca ctcacaaata cctaaatttc cttgaagact gctgccatgt 300
yttaagattt cttttttttt ccatagtgac tagtaaaacc tgccattttc attatacata 360
ggcactctat aaatatctgc taatttagca attattagta atttcctttc ttctcttcca 420
tttcttcctt tcttgtattg ggtaaaggaa catttcagga tttgcttatg taaagttttc 480
aggagtttct ttccttcctc cctttacag agagcataca aaatgtagat gattcatatt 540
cacttatttc atttaaataa aattataatg atgtatgttg tgttctgttt gcagaacaga 600
g                                                                601


<210> 26
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 26
ttattgctag tagagacact ggtagattct gccttggtag accttcctct gtcaacaatt 60
tactttgtc ttcctttctt ttaaaacatg tatcccactc acaaatacct aaatttcctt 120
gaagactgct gccatgtttt aagatttctt ttttttccca tagtgactag taaaacctgc 180
cattttcatt atacataggc actctataaa tatctgctaa tttagcaatt attagtaatt 240
tcctttcttc tcttccattt cttcctttct tgtattgggt aaaggaacat tcaggattt 300
kcttatgtaa agttttcagg agtttctttc cttcctccct tttacagaga gcatacaaaa 360
tgtagatgat tcatattcac ttatttcatt taaataaaat ataatgatg tatgttgtgt 420
tctgtttgca gaacagagtg ttctgaacat caacacaaag tggaagaacc ttaagctgaa 480
ggtacagtat attatttaca ctgaaggggc ttgtgtgtgg acaagaaagc gctgacagct 540
caaatggatc ccatggaact gagaaatgtc aacatcgaac cagatgatga gagcagcagt 600
g                                                                601


<210> 27
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 27
gtttcgtgtg ctgtttctat ctacatctca tactgttttc tattctcaaa aagtaaccct 60
gtcatcctct ttcctctcca gattatttc aggattagct tctgttataa aaaatagctt 120
gtacagatct cctacaataa ttattttcta ttttatttct aaggtttatt tatttattta 180
ttgagacaga cagagtttca ctcttgtggc ccatgctgga gtgcaatggt gcaatctcgg 240
ctcactgcaa cctctgcctc ccaggttcaa gcgattctcc tgcttcagcc tcctgagtag 300
ytgggattac aggcgcctgc caccacactc ggctaacttt ttgtatttct agtagagacg 360
aagtttcacc atgttggcca ggctggtctt gaactcctga cctcaagtta tccacccacc 420
tcagcctccc aaagtgctgg gattacaggc gtgagccact gtgcctggcc tctaggatta 480
tattaataga acaatcttca attattttat ctttctttat ctttcttttc atgtaggaaa 540
tgtcctaaaa ttttcaaacc ctcaatttga aagcacttt aaaatcatac atagtcgagc 600
a                                                                601


<210> 28
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 28
cagcctcctg agtagctggg attacaggcg cctgccacca cactcggcta actttttgta 60
tttctagtag agacgaagtt tcaccatgtt ggccaggctg gtcttgaact cctgacctca 120
agttatccac ccacctcagc ctcccaaagt gctgggatta caggcgtgag ccactgtgcc 180
tggcctctag gattatatta atagaacaat cttcaattat tttatctttc tttatctttc 240
ttttcatgta ggaaatgtcc taaaattttc aaaccctcaa tttgaaagca cttttaaaat 300
yatacatagt cgagcatttt atataaaaac aactaaaaag tctgtgacat tttgcagtat 360
aaaaatgcaa tggcagcagc aggccttatt aattgagcct cttggaaatg tggctggtcc 420
```

taggtccgta gcctcaaagg ccctggcttg taactgcagg agctgaccag cacagctcta 480
taaccaagtt gtacatcttc tagcctgtgt ccaagaaaac cagaatcaca acgctctgtg 540
gatagtgaca tcttaaagtt ttctttccct cccaactctt ttgccagttc attgaattgc 600
t   601

<210> 29
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 29
gcaacattta tatcacaaat atgtgctgtt tatgttctga atatcacata tgattagtaa 60
tcacacagct atttgagggc taagcatcag gactataaat atttgtattg tgttagtgct 120
ttgattgaac tcttttatgt ataatattct tcagctgaat gggttttttat atcaacttta 180
cttttatata agccatgttt tgaaataaac taggatttta ataatctgaa ttttaatagc 240
tatgtatgta gtcatatatt tgtatgcttt tgtaatgtgc ttacctctaa gacaaaaaaa 300
sctgcctttc cttattaatt atacatacca ttaaaatgaa ttaggaagtt acagatcact 360
gatgaataga aataggaaaa acttccccca atcccacagt catagatcat cttcatgaga 420
gaagaatgtt ccacttttta aaatgagggc ctcattttag gcttataaac acttagcaga 480
tgaatttggt cagaacaatt aaatcactaa acatcatggg gtgtgttttg tgtgtctaag 540
tagcccagac tggattaagc tttctctctt aatttatagc aagtgacaca gtattttaaa 600
g   601

<210> 30
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 30
ataagagtgc aacatagcta caggggttat aaaatttata attcatggtc caaatgtaca 60
tttgtagtat tgatttcatt gggaattacc aagggattag atcaattgtg gggaaagtgt 120
attttttaaa aataaacaaa gataaagatt ttttttctga attccaggta aaaggcagca 180
ttgctcctcc atttattacg tagatgcttc tatcaacatt cttattttg tgctccaaat 240
cttggatttg gaaaaatacc aatccgtata aacataaaga aaccatacat gcatgtgggg 300
rtcctaacac cagaaatgac tctgaatgca aaaaaaaaa aaaaaaaaa agggaatttt 360
cgtgccccat ccttagcttt ctctgctttc tctattatat atgcaactgc ctgcccctct 420
atcttacaaa gtacttcgta atctaatgca caggatcagc agtaatgcag ctcagactgc 480
atgctttcgc ctttggattc ctagatttca gattaaggtt tagtcaggct attgaatagc 540
ccttcaattc taagtgctga tgtgaatatc atgcaaatat gatgtacata ttcccatgtg 600
c   601

<210> 31
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 31
ctacaggggt tataaaattt ataattcatg gtccaaatgt acatttgtag tattgatttc 60
attgggaatt accaagggat tagatcaatt gtggggaaag tgtatttttt aaaaataaac 120
aaagataaag attttttttc tgaattccag gtaaaaggca gcattgctcc tccatttatt 180
acgtagatgc ttctatcaac attcttattt ttgtgctcca atcttggat ttggaaaaat 240
accaatccgt ataaacataa agaaaccata catgcatgtg gggatcctaa caccagaaat 300
ractctgaat gcaaaaaaaa aaaaaaaaa aaaagggaat tttcgtgccc catccttagc 360
tttctctgct ttctctatta tatatgcaac tgcctgcccc tctatcttac aaagtacttc 420
gtaatctaat gcacaggatc agcagtaatg cagctcagac tgcatgcttt cgcctttgga 480
ttcctagatt tcagattaag gtttagtcag gctattgaat agcccttcaa ttctaagtgc 540
tgatgtgaat atcatgcaaa tatgatgtac atattcccat gtgctgagta agtagatgta 600

18

<210> 32
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 32
aaatgtacat ttgtagtatt gatttcattg ggaattacca agggattaga tcaattgtgg 60
ggaaagtgta ttttttaaaa ataaacaaag ataaagattt tttttctgaa ttccaggtaa 120
aaggcagcat tgctcctcca tttattacgt agatgcttct atcaacattc ttattttgt 180
gctccaaatc ttggatttgg aaaaatacca atccgtataa acataaagaa accatacatg 240
catgtgggga tcctaacacc agaaatgact ctgaatgcaa aaaaaaaaaa aaaaaaaaaa 300
rggaattttc gtgccccatc cttagctttc tctgctttct ctattatata tgcaactgcc 360
tgccctcta tcttacaaag tacttcgtaa tctaatgcac aggatcagca gtaatgcagc 420
tcagactgca tgctttcgcc tttggattcc tagatttcag attaaggttt agtcaggcta 480
ttgaatagcc cttcaattct aagtgctgat gtgaatatca tgcaaatatg atgtacatat 540
tcccatgtgc tgagtaagta gatgtagcat ttgctaatgt tgctatacat ttagcatcta 600
a   601

<210> 33
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 33
taccaatccg tataaacata aagaaaccat acatgcatgt ggggatccta acaccagaaa 60
tgactctgaa tgcaaaaaaa aaaaaaaaaa aaaaagggaa ttttcgtgcc ccatccttag 120
ctttctctgc tttctctatt atatatgcaa ctgcctgccc ctctatctta caaagtactt 180
cgtaatctaa tgcacaggat cagcagtaat gcagctcaga ctgcatgctt tcgcctttgg 240
attcctagat ttcagattaa ggtttagtca ggctattgaa tagcccttca attctaagtg 300
ytgatgtgaa tatcatgcaa atatgatgta catattccca tgtgctgagt aagtagatgt 360
agcatttgct aatgttgcta tacatttagc atctaagtta tgaaccagat tctaccactg 420
ggtaacatta aaaaaaagtt agggacttca ggtatgtaaa atatagcaaa ttctatttct 480
acgactttaa agggtatgtg tagagttctg aaaagaattt ctcagcctcc cccaaatcca 540
catacttttg gaaagctgat gattgaaaag attaatgtga tcctttattg taacatctaa 600
c   601

<210> 34
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 34
accattgatt cttgtttgga gaacattttg atatattgct tattggtttt tgaggttgca 60
tcttttgggc ttataatttc tatatgatgt ttatttacat gtttgagact ccagcatgga 120
attatatgac aaaaatattt tagtcattaa aacaatctct ttaacaaggc tattttatct 180
ttgattgtag ggtctttgat ttatgaaaaa ttaggagaaa aggcatttgg atggccggga 240
aaaattggag cttttgtttc cattacaatg cagaacattg gaggtaaggg gatatacttt 300
ycaatggatc ccataaactt tctatagcgt gttcaataaa taagaaaact tatggcaata 360
aacaggcact ttagatacag aaaaattgct acttatagtt cttaaatttt aaaatgatag 420
tttcttaaat aggtttgtgt cctgctttaa ttaaaaacag caatatctaa gaatgaaata 480
acatataaaa ccctgccaat tgaattctag aattaaaata taaaataaaa gctttcttga 540
tttttaatgt tattatagca tgaattatta ctcttaaaaa ttgaagaatt tgtgcttata 600
t   601

<210> 35

<211> 601
<212> DNA
<213> Homo Sapiens

<400> 35
tttagataca gaaaaattgc tacttatagt tcttaaattt taaaatgata gtttcttaaa 60
taggtttgtg tcctgcttta attaaaaaca gcaatatcta agaatgaaat aacatataaa 120
accctgccaa ttgaattcta gaattaaaat ataaataaa agctttcttg atttttaatg 180
ttattatagc atgaattatt actcttaaaa attgaagaat ttgtgcttat atctgtcatt 240
gacaaaacag ttgacgtttt ctatgtgtga ctgagttcga tttactaaac tgaaaagtgg 300
ktgtctgggg gaacatagcc aaatgctgtg gtccttgaaa cgcagcctgc actgagccag 360
cccactagac agtgtctctg gaagtttact aaggcaaaag tctggctagg catcaaatgc 420
actataaacc ccggtttgtt gattctatgg attcttataa ttcccactga attatcattt 480
ccagtgtagg acctagaaat atatatatat attttaaca atgttctctc gttggtgtgt 540
ttgcccacca gcttcatact gtttctgttg tgtctttggc cctcagaagg catccaaacc 600
c   601

<210> 36
<211> 601
<212> DNA
<213> Homo Sapiens

<220>
<221> variation
<222> (301)...(301)
<223> T may be either present or absent

<400> 36
gactattgca gtagtcttct aactggtctt cctggcttga gtttcccctg ctctcagata 60
aactctaatt tgttctccag ataaactttc tcaaatttga gtctgtttct acttttgtcg 120
tgcataaaat tcttcagcat gcctttatta ttttcaagga aaaacttaaa ctcattggac 180
tgacacaaga tcttcgtcta gttcttctgc tcaatctttc taaacttttcc tagcaatgcc 240
catatctatc tatctttatc tatctatcta tctatctatc tatctatcta tctatctatc 300
tatcatctat caatttatcc atcatctata ccctacatgt cctgtgtcaa accataacaa 360
attatattta ttcccctaac agtactattt taatatttttt aaaaatcatc catgccttct 420
tttcacaggc tactttctcc ccttgactgt ctctcaaagt cctccaaccc taacacacac 480
gcacacacac acacacacac acacacacac acacacacat tttctctctc actctgctca 540
cctggtctat tgctcctcta gactggtaaa tactagttcc tctgggctct catggtcctg 600
t   601

<210> 37
<211> 601
<212> DNA
<213> Homo Sapiens

<220>
<221> variation
<222> (301)...(301)
<223> A may be either present or absent

<400> 37
attgcagtag tcttctaact ggtcttcctg gcttgagttt cccctgctct cagataaact 60
ctaatttgtt ctccagataa actttctcaa atttgagtct gtttctactt ttgtcgtgca 120
taaaattctt cagcatgcct ttattatttt caaggaaaaa cttaaactca ttggactgac 180
acaagatctt cgtctagttc ttctgctcaa tctttctaaa ctttcctagc aatgcccata 240
tctatctatc tttatctatc tatctatcta tctatctatc tatctatcta tctatctatc 300
atctatcaat ttatccatca tctataccct acatgtcctg tgtcaaacca taacaaatta 360

```
tatttattcc cctaacagta ctattttaat attttaaaa  atcatccatg ccttcttttc 420
acaggctact ttctcccctt gactgtctct caaagtcctc caaccctaac acacacgcac 480
acacacacac acacacacac acacacacac acacattttc tctctcactc tgctcacctg 540
gtctattgct cctctagact ggtaaatact agttcctctg ggctctcatg gtcctgtttg 600
t                                                                601
```

<210> 38
<211> 601
<212> DNA
<213> Homo Sapiens

<220>
<221> variation
<222> (301)...(301)
<223> T may be either present or absent

<400> 38
```
gcagtagtct tctaactggt cttcctggct tgagtttccc ctgctctcag ataaactcta 60
atttgttctc cagataaact ttctcaaatt tgagtctgtt tctacttttg tcgtgcataa 120
aattcttcag catgccttta ttattttcaa ggaaaaactt aaactcattg gactgacaca 180
agatcttcgt ctagttcttc tgctcaatct ttctaaactt tcctagcaat gcccatatct 240
atctatcttt atctatctat ctatctatct atctatctat ctatctatct atctatcatc 300
tatcaattta tccatcatct ataccctaca tgtcctgtgt caaaccataa caaattatat 360
ttattcccct aacagtacta ttttaatatt tttaaaaatc atccatgcct tcttttcaca 420
ggctactttc tccccttgac tgtctctcaa agtcctccaa ccctaacaca cacgcacaca 480
cacacacaca cacacacaca cacacacaca cattttctct ctcactctgc tcacctggtc 540
tattgctcct ctagactggt aaatactagt cctctgggc tctcatggtc ctgtttgtat 600
c                                                                601
```

<210> 39
<211> 601
<212> DNA
<213> Homo Sapiens

<220>
<221> variation
<222> (301)...(301)
<223> C may be either present or absent

<400> 39
```
ctgacacaag atcttcgtct agttcttctg ctcaatcttt ctaaactttc ctagcaatgc 60
ccatatctat ctatctttat ctatctatct atctatctat ctatctatct atctatctat 120
ctatcatcta tcaatttatc catcatctat accctacatg tcctgtgtca aaccataaca 180
aattatattt attcccctaa cagtactatt ttaatatttt taaaaatcat ccatgccttc 240
ttttcacagg ctactttctc cccttgactg tctctcaaag tcctccaacc taacacaca 300
cgcacacaca cacacacaca cacacacaca cacacacaca ttttctctct cactctgctc 360
acctggtcta ttgctcctct agactggtaa atactagttc ctctgggctc tcatggtcct 420
gtttgtatct agtatgttac tgttttctaa aggatatttt aaaacacttg agtagagaat 480
aagcttttgg agtctgatgg acctgaattt gagtctgttt ctgtcactat ctgtgaactt 540
gggaagatca ctgtactcct ttgtctgatt ttttcatgta taaaaattac cttacaaagg 600
c                                                                601
```

<210> 40
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 40
acacaagatc ttcgtctagt tcttctgctc aatctttcta aactttccta gcaatgccca 60
tatctatcta tctttatcta tctatctatc tatctatcta tctatctatc tatctatcta 120
tcatctatca atttatccat catctatacc ctacatgtcc tgtgtcaaac cataacaaat 180
tatatttatt cccctaacag tactatttta atatttttaa aaatcatcca tgccttcttt 240
tcacaggcta ctttctcccc ttgactgtct ctcaaagtcc tccaaccccta acacacacgc 300
rcacacacac acacacacac acacacacac acacacattt tctctctcac tctgctcacc 360
tggtctattg ctcctctaga ctggtaaata ctagttcctc tgggctctca tggtcctgtt 420
tgtatctagt atgttactgt tttctaaagg atattttaaa acacttgagt agagaataag 480
cttttggagt ctgatggacc tgaatttgag tctgtttctg tcactatctg tgaacttggg 540
aagatcactg tactcctttg tctgattttt tcatgtataa aaattacctt acaaaggcta 600
t   601

<210> 41
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 41
actgtctctc aaagtcctcc aaccctaaca cacacgcaca cacacacaca cacacacaca 60
cacacacaca cacattttct ctctcactct gctcacctgg tctattgctc ctctagactg 120
gtaaatacta gttcctctgg gctctcatgg tcctgtttgt atctagtatg ttactgtttt 180
ctaaaggata ttttaaaaca cttgagtaga gaataagctt ttggagtctg atggacctga 240
atttgagtct gtttctgtca ctatctgtga acttgggaag atcactgtac tcctttgtct 300
rattttttca tgtataaaaa ttaccttaca aaggctattg tgaggatgaa ataaggtaac 360
atatggcaca taataagtgt tctgtatatg cttctctcct ccctggttct ctgcttccat 420
atccatgtct ctggagttgc ctgaattatt ttttaaatag gcatttaaaa aattataaaa 480
caaatatatg atgattgtga aaaactaaaa cactgcataa atatataaat taccaagaaa 540
agtttatgtc agtcatcctc agaaataact actcataggt tttcccctat gcctaattca 600
a   601

<210> 42
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 42
tatcgagcat ttcataggat tgccttatag ttggtctaat ttaacaactg aaataaccag 60
gcataagcat aattaaccct ggactcaaga agttgagtgg cagcacctca gctgtggttc 120
aaagcatagc cactactacg cttctaaaca atggaataaa gtataaagcg gtctctcagt 180
caagcctcac acaggtaaga ggcgtgactt taagggagta agatgaaata tcgtaacatc 240
accccagaaa taatgctctc actttggtta ctttatttga ttagttgata tttggcataa 300
sagaaatcac ttgtatttct ctatttaaca actctacatt tagaacactt aattttctca 360
atcccctaaa aaattaacat ttactgcaga tgttttcaca ttaacagatt aatgtctgga 420
tcattctgaa tttttgaaga ccaaacatgt taacatcact gacatcactg aaaaccagca 480
attaatagct gtaacattga atggtacctc accaagccag ctaatcagaa atatctcctg 540
tgttcacact ctgtaagatt tagctttagc caaggtcttt gcaagatta accaaataat 600
g   601

<210> 43
<211> 601
<212> DNA
<213> Homo Sapiens

<220>
<221> variation
<222> (301)...(301)

22

<223> G may be either present or absent

<400> 43
tgagttctat ttttaactga atcttttggc catgtgtcaa caaattaacg ttatccttca 60
ccaaatgggt gggcttgaaa aaggcgtgat gcataaatat ttacagttgt aggcaaaatt 120
gtaatgttat gtatatgaat acatattcat tttttcaggg agaaggcttg tagatttcat 180
caagaaatct ttcacaagag tagataatca ttcatgtatc acttacctag atgctcatga 240
aattttgcca ctttatataa ttccttagtt agccaaaagg agagtaagat gaagaggggg 300
gaaaaaaaaa acttctttga caaagatgga gagaagctgt catctcttgt attctttat 360
caatccagga agcctttggt tttgacaata agtggtctga gactttgtgt actcctcaga 420
taggtcccgg aggactagat tggtgcccat ctgcagaaaa ccagagggga tatattgact 480
ctgcagatct gccctttgat tctgccatct ctcagctggc ccatgccttt tgttgccaga 540
ctactgccca agttatagac actaacacag gcacactgag tatgggctat gttgatttat 600
a   601

<210> 44
<211> 601
<212> DNA
<213> Homo Sapiens

<220>
<221> variation
<222> (301)...(301)
<223> A may be either present or absent

<400> 44
tctattttta actgaatctt ttggccatgt gtcaacaaat taacgttatc cttcaccaaa 60
tgggtgggct tgaaaaaggc gtgatgcata aatatttaca gttgtaggca aaattgtaat 120
gttatgtata tgaatacata ttcatttttt cagggagaag gcttgtagat ttcatcaaga 180
aatctttcac aagagtagat aatcattcat gtatcactta cctagatgct catgaaattt 240
tgccacttta tataattcct tagttagcca aaaggagagt aagatgaaga ggggggaaaa 300
aaaaacttc tttgacaaag atggagagaa gctgtcatct cttgtattct tttatcaatc 360
caggaagcct ttggttttga caataagtgg tctgagactt tgtgtactcc tcagataggt 420
cccggaggac tagattggtg cccatctgca gaaaaccaga ggggatatat tgactctgca 480
gatctgccct ttgattctgc catctctcag ctggcccatg ccttttgttg ccagactact 540
gcccaagtta tagacactaa cacaggcaca ctgagtatgg gctatgttga tttataacta 600
a   601

<210> 45
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 45
aggcgtgatg cataaatatt tacagttgta ggcaaaattg taatgttatg tatatgaata 60
catattcatt ttttcaggga gaaggcttgt agatttcatc aagaaatctt tcacaagagt 120
agataatcat tcatgtatca cttacctaga tgctcatgaa attttgccac tttatataat 180
tccttagtta gccaaaagga gagtaagatg aagagggggg aaaaaaaaa cttctttgac 240
aaagatggag agaagctgtc atctcttgta ttcttttatc aatccaggaa gcctttggtt 300
ytgacaataa gtggtctgag actttgtgta ctcctcagat aggtcccgga ggactagatt 360
ggtgcccatc tgcagaaaac cagaggggat atattgactc tgcagatctg ccctttgatt 420
ctgccatctc tcagctggcc catgcctttt gttgccagac tactgcccaa gttatagaca 480
ctaacacagg cacactgagt atgggctatg ttgatttata actaatgagg gcagaacctt 540
agaactgcag cttcactgta aactttggag caggatttaa cacagaatca gccctgatac 600
t   601

<210> 46

<211> 601
<212> DNA
<213> Homo Sapiens

<400> 46
agaacttgga agcagtgcca aatacacaat gacttttttt tccatttggg ggattagatg 60
ttcatcttac atatcccaaa tgtcataact tgcttgcatg tgacttcagt actgtccaca 120
ccattaagct gtcacatttt ccattttagc aatgtcaagc tacctcttta tcattaaata 180
tgaactacct gaagtaatca gagcattcat gggacttgaa gaaaatactg ggtatgtctt 240
atgctccctc tgtgacatca agtgactcat tctacttggt cttttctgat tctaatatcc 300
ytgtctctca cttctagaga atggtacctc aatggcaact acctcatcat atttgtgtct 360
gttggaatta ttcttccact ttcgctcctt aaaaatttag gtaaagatat tttctaactg 420
gaaatatttt tatttttatt tcacatttaa ataggttagc taattgtaga tgccatattc 480
accttccaaa atgcttcttc taacttctag gttatcttgg ctataccagt ggattttctc 540
ttacctgcat ggtgtttttt gttagtgtgg taagtgatgt gatgacatga tccttgcagg 600
t   601

<210> 47
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 47
gttggttagc atgagttttt ttgtgcctaa attagtgtcc tcattttgtt caagcacttc 60
actaatatga aatagttctt gtatcacaag tgattttctt gtagactaat ttagagcaaa 120
aaaagagcag ctacgattta aagatagttg aggtagaata tcaaagctac tactaatggt 180
ttggtctagg cacactggtt atatatgggg aaaaaaggaa aacttcaagc aggaacatga 240
caataatctg gcatttagaa cagcagagga gagtcccaga tgagaaacaa gaaggctata 300
yccatattca catgaatcag ccattctctc ttacacattc cacccattaa gagaggacaa 360
gaacagtggg attaaagaag aaatcctcct ctctaggccc ctgacaaaag agggaatttc 420
ttgcactatc atgaatgcca aaatttataa agcatttccc caaagaggta aaggagaagg 480
aaaaaaagtt ttgaagaccc atgtcacctt agtttgaaga aataaggaaa tgatcatctt 540
tctcatggaa gggcatgaaa gagggtggga aggattcttg caaaatattg tcctgttaac 600
t   601

<210> 48
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 48
cattttagca ttctaatttg ctttgaaatt ctgctcatat gttcaaagat tctttaacag 60
gaaacacagt ttatagcttc ctcttcagag aaaatatgta ctccatccac tcctcagtaa 120
catgctttaa tcagaaaggt gggaatcagc ccaccacagc actaccttat cttctttctc 180
tcctttctct ccaccataat ggttcagggg aggggttcat ggcaggtgga caaggagtcg 240
atggttgtaa taattttggc aggtgttggg aatttaaatt tgaattttgt tcggaagaaa 300
ygatgtcagc tggactagaa atgaaaacac ccatgacgac caaaacttat ggttaggggc 360
agcctcgata agccagtgat gtcatttata gtcagcacct aacccttgtc tagaacacat 420
tcattacaag agatgtgtca atatctgtcc tttgttgtct tatttgtaca atagagtcac 480
tggctagaaa atcttgtttc ttccagctga tggtctatgg ttcatttgta ttcttttccc 540
tttgaagttg ttgatatttg cttgggaaca aaggatatga actcattata gctgtttttcc 600
t   601

<210> 49
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 49

```
aaatgaaaac acccatgacg accaaaactt atggttaggg gcagcctcga taagccagtg 60
atgtcattta tagtcagcac ctaacccttg tctagaacac attcattaca agagatgtgt 120
caatatctgt cctttgttgt cttatttgta caatagagtc actggctaga aaatcttgtt 180
tcttccagct gatggtctat ggttcatttg tattcttttc cctttgaagt tgttgatatt 240
tgcttgggaa caaaggatat gaactcatta tagctgtttt cctctttcct ttaagggagg 300
rtattatata ataattctca acttctttaa tctagacatc agtaacctca gtcttcattc 360
tcactaaata gcaaaacttt ccccataaat tctgatttac ctcataaaaa atttcagaac 420
actttcaagt attttgatgt ctttgattta ctttgaaaat tacatgtagc agttactcca 480
gaagcctgac aattgatctt tggcagccag gttccttcta gaatggtttt cagaagcttt 540
tcaggtagtc tggactcctg gcagtagtac tttgctgact ctactaggtt cttttcctca 600
t                                                            601
```

<210> 50
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 50

```
acaagagatg tgtcaatatc tgtcctttgt tgtcttattt gtacaataga gtcactggct 60
agaaaatctt gtttcttcca gctgatggtc tatggttcat ttgtattctt ttccctttga 120
agttgttgat atttgcttgg gaacaaagga tatgaactca ttatagctgt tttcctcttt 180
cctttaaggg aggatattat ataataattc tcaacttctt taatctagac atcagtaacc 240
tcagtcttca ttctcactaa atagcaaaac tttccccata aattctgatt tacctcataa 300
raaatttcag aacactttca gtattttga tgtctttgat ttactttgaa aattacatgt 360
agcagttact ccagaagcct gacaattgat ctttggcagc caggttcctt ctagaatggt 420
tttcagaagc ttttcaggta gtctggactc ctggcagtag tactttgctg actctactag 480
gttctttttcc tcatttaaag tcatctcatt atgaaatgca aaagctttct atgttaggag 540
cctgtttcat ctttatgtta attatattct tattcagtgg gcaagcttac tgacctacgt 600
g                                                            601
```

<210> 51
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 51

```
tattatataa taattctcaa cttctttaat ctagacatca gtaacctcag tcttcattct 60
cactaaatag caaaactttc cccataaatt ctgatttacc tcataaaaaa tttcagaaca 120
ctttcaagta ttttgatgtc tttgatttac tttgaaaatt acatgtagca gttactccag 180
aagcctgaca attgatcttt ggcagccagg ttccttctag aatggttttc agaagctttt 240
caggtagtct ggactcctgg cagtagtact ttgctgactc tactaggttc ttttcctcat 300
ytaaagtcat ctcattatga aatgcaaaag ctttctatgt taggagcctg tttcatcttt 360
atgttaatta tattcttatt cagtgggcaa gcttactgac ctacgtgaaa tagactgttc 420
ctcttctagg gaaatgattg tttttaagac tgaaggacta gtgtttaaga aaaatggaaa 480
tgaatcctca ttagctctct aagacaaatt taaatcagct ataagtttat gtactaaata 540
tgtcttcatg attagcaata tagatatact tttttattat tattttcatt ttgaaaagtg 600
a                                                            601
```

<210> 52
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 52

```
tcattctcac taaatagcaa aactttcccc ataaattctg atttacctca taaaaaattt 60
```

```
cagaacactt tcaagtattt tgatgtcttt gatttacttt gaaaattaca tgtagcagtt  120
actccagaag cctgacaatt gatctttggc agccaggttc cttctagaat ggttttcaga  180
agcttttcag gtagtctgga ctcctggcag tagtactttg ctgactctac taggttcttt  240
tcctcattta aagtcatctc attatgaaat gcaaaagctt tctatgttag gagcctgttt  300
satctttatg ttaattatat tcttattcag tgggcaagct tactgaccta cgtgaaatag  360
actgttcctc ttctagggaa atgattgttt ttaagactga aggactagtg tttaagaaaa  420
atggaaatga atcctcatta gctctctaag acaaatttaa atcagctata agtttatgta  480
ctaaatatgt cttcatgatt agcaatatag atatactttt ttattattat tttcattttg  540
aaaagtgatt ttttttgta agtttaaaaa acaaagcttg gtgttctttc tttttccagt  600
c                                                                   601


<210> 53
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 53
cagaagcttt tcaggtagtc tggactcctg gcagtagtac tttgctgact ctactaggtt  60
ctttttcctca tttaaagtca tctcattatg aaatgcaaaa gctttctatg ttaggagcct  120
gtttcatctt tatgttaatt atattcttat tcagtgggca agcttactga cctacgtgaa  180
atagactgtt cctcttctag ggaaatgatt gttttttaaga ctgaaggact agtgtttaag  240
aaaaatggaa atgaatcctc attagctctc taagacaaat ttaaatcagc tataagttta  300
ygtactaaat atgtcttcat gattagcaat atagatatac tttttttatta ttattttcat  360
tttgaaaagt gattttttttt tgtaagttta aaaaacaaag cttggtgttc tttcttttttc  420
cagtcggtcc cggagaaaaa tgcaaacggt gtcaaatatt ccatcacgg ggatgcttgt  480
catgtacctg cttgccgccc tctttggtta cctaaccttc tatggtaggt cactctgaaa  540
gtcattctct atatgcaaat ccttgttagg ctggtccttg acctgggtag gtatgatttt  600
t                                                                   601


<210> 54
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 54
actcctggca gtagtacttt gctgactcta ctaggttctt ttcctcattt aaagtcatct  60
cattatgaaa tgcaaaagct ttctatgtta ggagcctgtt tcatctttat gttaattata  120
ttcttattca gtgggcaagc ttactgacct acgtgaaata gactgttcct cttctaggga  180
aatgattgtt tttaagactg aaggactagt gtttaagaaa aatggaaatg aatcctcatt  240
agctctctaa gacaaattta aatcagctat aagtttatgt actaaatatg tcttcatgat  300
kagcaatata gatatacttt tttattatta ttttcatttt gaaaagtgat tttttttgt  360
aagtttaaaa acaaagcttg gtgttctttt cttttccag tcggtcccgg agaaaaatgc  420
aaacggtgtc aaatatttcc atcacgggga tgcttgtcat gtacctgctt gccgccctct  480
ttggttacct aaccttctat ggtaggtcac tctgaaagtc attctctata tgcaaatcct  540
tgttaggctg gtccttgacc tgggtaggta tgatttttaa aaattgcctt ctataagcat  600
g                                                                   601


<210> 55
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 55
ggtatgattt ttaaaaattg ccttctataa gcatgctcta tagatgacac atattcaatt  60
aatatactat tttagttttg tcacttgacc tgaggaaatg gggcctgatt cagcctggct  120
aacaagttac aagaatttgt gaattaacac ctattttata aaaaatatcc ctcaaacaaa  180
attattttcc tctagggata gatgatattt ctctggctag actccatagt ccaactcagg  240
```

26

```
ctacaagtga tgagaatgaa tccacttgca tgtgataaag ctcctttgat ggaattatta 300
mctgccacac aaatagcagg gaaactgcca ggtcctcaag tttgaatttg cctcctcttt 360
accagtcaag tcaaatctgg gagcttggga ctttaggtaa aatttctgac atatcccatt 420
ctattttgtt atactaaatg atttcctaag aaagaggaca tgacagaatt ccttcaatc 480
taagaatgca ccaccaaaaa aaagtgacta tggccacatt agattatgcc tgcaacattt 540
cctctctggc atcttaacag ttcacaaagg gagtaggatt gtactccttc catgaagtgt 600
g                                                                601

<210> 56
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 56
ctgccacaca aatagcaggg aaactgccag gtcctcaagt ttgaatttgc ctcctcttta 60
ccagtcaagt caaatctggg agcttggac tttaggtaaa atttctgaca tatcccattc 120
tattttgtta tactaaatga tttcctaaga aagaggacat gacagaattt ccttcaatct 180
aagaatgcac caccaaaaaa aagtgactat ggccacatta gattatgcct gcaacatttc 240
ctctctggca tcttaacagt tcacaaaggg agtaggattg tactccttcc atgaagtgtg 300
rccacataaa cagatttcat ggaatcacat attgacctgg tagcatatgt ttacatgaat 360
cagtgtatca atataaatat atttttgtat aaacctcctt ttaaagtttt taacttaatt 420
tttttcttac tgacttggta aattgaattg catgtatgac aaattgtgga ggaaaagatt 480
caggagtagg ccaccatttg cttaggtttt ttttctattt gactaatatt tgactattaa 540
ccaaacatgt gctttagatt gggcattaac tttttgccgg ttgtgaaata atgaatgacg 600
a                                                                601

<210> 57
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 57
tattgacctg gtagcatatg tttacatgaa tcagtgtatc aatataaata tattttttgta 60
taaacctcct tttaaagttt ttaacttaat ttttttctta ctgacttggt aaattgaatt 120
gcatgtatga caaattgtgg aggaaaagat tcaggagtag gccaccattt gcttaggttt 180
tttttctatt tgactaatat ttgactatta accaaacatg tgctttagat tgggcattaa 240
cttttttgccg gttgtgaaat aatgaatgac gaggtcaata ctactgaagg tattttcact 300
mcttttttgtc tgatcttgag gtgaaaatcc aactacgctt gattccatag atattttctt 360
gttatttgtg cttggagtcc tgaatgaagg tgttttcaag tagggctgca tcttcgtctt 420
agagtagtac ccactgggag accatctaaa aattatacta atttatccct gcacgttact 480
tatacttatt ttaatgagtt tcataagaca agcaaaaact tgaaagagcc caaaaatatc 540
tgttttagtg tggtgatgga gtcatagttg ttgagcttga aaaaatggta gcaatcattc 600
a                                                                601

<210> 58
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 58
taggtttttt ttctatttga ctaatatttg actattaacc aaacatgtgc tttagattgg 60
gcattaactt tttgccggtt gtgaaataat gaatgacgag gtcaatacta ctgaaggtat 120
tttcactact ttttgtctga tcttgaggtg aaaatccaac tacgcttgat tccatagata 180
ttttcttgtt atttgtgctt ggagtcctga atgaaggtgt tttcaagtag ggctgcatct 240
tcgtcttaga gtagtaccca ctgggagacc atctaaaaat tatactaatt tatccctgca 300
ygttacttat acttatttta atgagtttca taagacaagc aaaaacttga aagagcccaa 360
aaatatctgt tttagtgtgg tgatggagtc atagttgttg agcttgaaaa aatggtagca 420
```

27

```
atcattcatc ctagagttta cacactgggt ttgtaacctg catcaggagt ggctgcacag 480
gtagggacag gggaggtggt aggctgggag agacaatatg tggggcttgg gtctctcatc 540
cccttcaaca agagcacctt ggtctctgtc tgatttgtaa ttgcttctgt acagcggaga 600
t                                                                601
```

<210> 59
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 59
```
gatattttct tgttatttgt gcttggagtc ctgaatgaag gtgttttcaa gtagggctgc 60
atcttcgtct tagagtagta cccactggga gaccatctaa aaattatact aatttatccc 120
tgcacgttac ttatacttat tttaatgagt ttcataagac aagcaaaaac ttgaaagagc 180
ccaaaaatat ctgttttagt gtggtgatgg agtcatagtt gttgagcttg aaaaaatggt 240
agcaatcatt catcctagag tttacacact gggtttgtaa cctgcatcag gagtggctgc 300
rcaggtaggg acaggggagg tggtaggctg ggagagacaa tatgtggggc ttgggtctct 360
catccccttc aacaagagca ccttggtctc tgtctgattt gtaattgctt ctgtacagcg 420
gagatagatt tatcacaatg taaatgagct tgagaggctc tttattttgt attatacctt 480
ctgcaacgtt atcagcttca ggacctcttt gttcatttga atgaaggttg catagctaat 540
gagctcagag gcaagaccag aggtgcctgg attcccaggc ctaggtcttt tcctctgttc 600
t                                                                601
```

<210> 60
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 60
```
tgagcttgag aggctctttta ttttgtatta taccttctgc aacgttatca gcttcaggac 60
ctctttgttc atttgaatga aggttgcata gctaatgagc tcagaggcaa gaccagaggt 120
gcctggattc ccaggcctag gtcttttcct ctgttctgtg ttctctctat aaaatgttgc 180
cataagtgac ctgtgctgat ttgacaacac caagcggttt cattctcttt ttcctgttgt 240
aggagaagtt gaagatgaat tacttcatgc ctacagcaaa gtgtatacat tagacatccc 300
ycttctcatg gttcgcctgg cagtccttgt ggcagtaaca ctaactgtgc ccattgtcct 360
cttcccagta agtacataag actttgatga aagaaaccta cttgacccca taaattagta 420
catgtgttct accttcattt tgatttaatt atagggtgag tttgcaattg caatgcctga 480
ggatattatt ttcctatagc attttgagtc acttaaaatt ggccatttaa tgtgtagata 540
gagcaagtag tttcaggtgg tattttttata gtgtaggaaa aaaatcataa aacttatttt 600
t                                                                601
```

<210> 61
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 61
```
aaacagttat gctatctatc acatatctct ctcacacatg gcctctgcca gactcacacc 60
aggtcacccc tccctggcat ttgtcattgg tgtcagtttg ttctgagatc ccagagcaga 120
gctggtagtg aagatttggg ctgtgtgagt taaaaccacc acctaaggat aaacacaggt 180
cttcaccctc ctgccagctc ctgtttcata aacactgaat ttactcattc atttgagggg 240
gaaaaaaata agtgacacag taaccagcac tgtcctggac ataatgttcc atacagggct 300
kgcatatgaa gactatttct ataatgacac tgtggtcact ttaaatgcag cttgtgtgct 360
gaaatatatt ttggcacatt ccttttttcat gagtgcatga aatcagatcc gtactactat 420
ggtggctaat attttactct taaatcatgt cttgcctcta atatatctga aagtatttca 480
gatgacatac acatagcttt agcctaaaat cagctccgtc ttgggtacaa gacagaagac 540
aactataaac agaaggtata cgataggta aaattgccag gcaaacaact tcactgagaa 600
```

<210> 62
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 62
```
tgagaaataa agcactgata taaatctgac catcaggaac agcaatagtg tgtaaacatt 60
agatgccatt agaaccaaaa ttgaccataa gaaccagagt tcagaaaaat gactaactgc 120
tgtccttcat tatgtatttc cactcaacat tagcatttat gaaacatttt gcacattatc 180
ctgtcctcac ccttgcaatg ttacatttat ataatctgtg taagtgctcc actgccccac 240
agagtcataa gtccctggga cttggtgatg tgcacagtga ctggcacaga gggtgagctc 300
ygtcgtgctt gggaagaaaa atggtcttca aatgaatctt gccttgtctt gaaatgtata 360
aactgccttt tctagcaaaa gcatagacac tctttccctt ggtgacatgt gctacgaatt 420
cagctgggtt gaggatctgg gctaaatgaa ccaaacctcc ctatacatga aggatacaca 480
gagatggtga cagagagtgg tcacttccgt gagtggatct caatcaagtc ctctgaagct 540
aaattcaatt ttttttcttt actaaaatga taaagttgt tattggcgct tttgcttgtt 600
t                                                                    601
```

<210> 63
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 63
```
aaataaagca ctgatataaa tctgaccatc aggaacagca atagtgtgta aacattagat 60
gccattagaa ccaaaattga ccataagaac cagagttcag aaaaatgact aactgctgtc 120
cttcattatg tatttccact caacattagc atttatgaaa cattttgcac attatcctgt 180
cctcaccctt gcaatgttac atttatataa tctgtgtaag tgctccactg ccccacagag 240
tcataagtcc ctgggacttg gtgatgtgca cagtgactgg cacagagggt gagctctgtc 300
rtgcttggga agaaaaatgg tcttcaaatg aatcttgcct tgtcttgaaa tgtataaact 360
gccttttcta gcaaaagcat agacactctt tcccttggtg acatgtgcta cgaattcagc 420
tgggttgagg atctgggcta aatgaaccaa acctccctat acatgaagga tacacagaga 480
tggtgacaga gagtggtcac ttccgtgagt ggatctcaat caagtcctct gaagctaaat 540
tcaatttttt ttctttacta aaatgataaa gttgttatt ggcgctttg cttgtttatt 600
t                                                                    601
```

<210> 64
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 64
```
caatagtgtg taaacattag atgccattag aaccaaaatt gaccataaga accagagttc 60
agaaaaatga ctaactgctg tccttcatta tgtatttcca ctcaacatta gcatttatga 120
aacattttgc acattatcct gtcctcaccc ttgcaatgtt acatttatat aatctgtgta 180
agtgctccac tgccccacag agtcataagt ccctgggact tggtgatgtg cacagtgact 240
ggcacagagg gtgagctctg tcgtgcttgg gaagaaaaat ggtcttcaaa tgaatcttgc 300
yttgtcttga aatgtataaa ctgccttttc tagcaaaagc atagacactc tttcccttgg 360
tgacatgtgc tacgaattca gctgggttga ggatctgggc taaatgaacc aaacctccct 420
atacatgaag gatacacaga gatggtgaca gagagtggtc acttccgtga gtggatctca 480
atcaagtcct ctgaagctaa attcaatttt ttttctttac taaaatgata aagttgtta 540
ttggcgcttt tgcttgttta tttcgtataa cttagggctc agattttcaa tgtgtcaaat 600
g                                                                    601
```

<210> 65

<211> 601
<212> DNA
<213> Homo Sapiens

<400> 65
cctcaccctt gcaatgttac atttatataa tctgtgtaag tgctccactg ccccacagag 60
tcataagtcc ctgggacttg gtgatgtgca cagtgactgg cacagagggt gagctctgtc 120
gtgcttggga agaaaaatgg tcttcaaatg aatcttgcct tgtcttgaaa tgtataaact 180
gccttttcta gcaaaagcat agacactctt tcccttggtg acatgtgcta cgaattcagc 240
tgggttgagg atctgggcta aatgaaccaa acctccctat acatgaagga tacacagaga 300
wggtgacaga gagtggtcac ttccgtgagt ggatctcaat caagtcctct gaagctaaat 360
tcaatttttt ttctttacta aaatgataaa agttgttatt ggcgcttttg cttgtttatt 420
tcgtataact tagggctcag attttcaatg tgtcaaatgc tgactcacag catggttctc 480
ctgacagttt atttcattta aggaactctt caccagtaag tttatttact tgccttgata 540
tctccacaca ttaataataa aactaacaaa acctaatctg aattaaaatc tatcagcttt 600
a   601

<210> 66
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 66
catgaaggat acacagagat ggtgacagag agtggtcact tccgtgagtg gatctcaatc 60
aagtcctctg aagctaaatt caattttttt tctttactaa aatgataaaa gttgttattg 120
gcgcttttgc ttgtttattt cgtataactt agggctcaga ttttcaatgt gtcaaatgct 180
gactcacagc atggttctcc tgacagttta tttcatttaa ggaactcttc accagtaagt 240
ttatttactt gccttgatat ctccacacat taataataaa actaacaaaa cctaatctga 300
rttaaaatct atcagcttta ggcattattt tgtgttctcc ttctttcaac atggtaactg 360
ggctctcttt cttaggagct tgagaagata tgactggggt ttgttttttct ctacttcatt 420
tattatcttt cttttttcca atcaggttag ttttttcctt tttagtaaaa ggtgcatagt 480
aactgcttgt agtatttgtt gaacaagtga ataaatgaaa tgaattaagg tagtgttttc 540
actagcagcc caacatttct ttctctctta gtagtgggtg gggtatcagt tatggaatgg 600
c   601

<210> 67
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 67
gaaatgaatt aaggtagtgt tttcactagc agcccaacat ttctttctct cttagtagtg 60
ggtggggtat cagttatgga atggcacctc cttccagagg actgatcatg tcattttcag 120
cttatgcttc cctttatgca gtaaagtttc catatttcca taaagaacaa gaaaccaaat 180
aatcctaatg gatatataat gaacacacag atgaaaattt cacctgccat gcctttgaaa 240
aaagatccct agctacttgt atttcatctt ataattaaaa tcagtctttt cacttatgtt 300
ktcttcagat ctcctgtttt gaagtgtata tagatatcaa catagaaatg cagcgtatat 360
tgctatcaac tgcagtggag cagtgattcg taggttttcc aacatccttg ccttaagcaa 420
acctgcaaaa tcaaagtgtg agctacgtct aaacaatggg agaggctttt tttttttttt 480
taagagttag aactaagact ctcacttcct cctgtgcctc cacatttttg accttcacat 540
tgggcccctg catcagaata cagcacecce taacaggctc ctgttcagga ctctttctct 600
g   601

<210> 68
<211> 601
<212> DNA
<213> Homo Sapiens

30

<400> 68
aaatgaatta aggtagtgtt ttcactagca gcccaacatt tctttctctc ttagtagtgg 60
gtggggtatc agttatggaa tggcacctcc ttccagagga ctgatcatgt cattttcagc 120
ttatgcttcc ctttatgcag taaagtttcc atatttccat aaagaacaag aaaccaaata 180
atcctaatgg atatataatg aacacacaga tgaaaatttc acctgccatg cctttgaaaa 240
aagatcccta gctacttgta tttcatctta taattaaaat cagtcttttc acttatgttt 300
ycttcagatc tcctgttttg aagtgtatat agatatcaac atagaaatgc agcgtatatt 360
gctatcaact gcagtggagc agtgattcgt aggttttcca acatccttgc cttaagcaaa 420
cctgcaaaat caaagtgtga gctacgtcta aacaatggga gaggctttt ttttttttt 480
aagagttaga actaagactc tcacttcctc ctgtgcctcc acatttttga ccttcacatt 540
gggcccctgc atcagaatac agcacccct aacaggctcc tgttcaggac tctttctctg 600
g   601

<210> 69
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 69
ggatggtgct ggggacctcc ctgacccaca gcatctgacc cacatttcca ggttcctagc 60
gacttgtgtc agtaaagaaa aaggcacata gctaagtgga agagcagatg aggcttggtg 120
ggaatcagcc agtggtctgc cctagcaaag gtaaacagaa ctgctggggg ctttttggtcc 180
taggctcact actcagggag gcactttaac atggaatgac cagcaagttt ccttcctgat 240
cttttccacc accaccacaa gcctagtacc tccctccctc tttgctctgt tgctctcttc 300
rggaatgcac tggaaaccac cttcagttct gtttggaatt ttcctattcc ttattcagaa 360
agaggaagaa gcttttgcat ttactccaac cgttctacct attattccca taaactttct 420
gtgatctcat atcattaggc caaatgttaa tctttctggg agccaggaga ctgctttcac 480
attcagaggc cctggacata taggactgcc tctaactcac tctaactcag cttattgact 540
tgaatgcacc tttttaacaa gtgactaaaa aacaaactgt gactattctc tgaaaatgag 600
c   601

<210> 70
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 70
gatgaggctt ggtgggaatc agccagtggt ctgccctagc aaaggtaaac agaactgctg 60
ggggcttttg gtcctaggct cactactcag ggaggcactt taacatggaa tgaccagcaa 120
gtttccttcc tgatctttc caccaccacc acaagcctag tacctccctc cctctttgct 180
ctgttgctct cttcgggaat gcactggaaa ccaccttcag ttctgtttgg aattttccta 240
ttccttattc agaaagagga agaagctttt gcatttactc caaccgttct acctattatt 300
sccataaact ttctgtgatc tcatatcatt aggccaaatg ttaatctttc tgggagccag 360
gagactgctt tcacattcag aggccctgga catataggac tgcctctaac tcactctaac 420
tcagcttatt gacttgaatg cacctttta acaagtgact aaaaaacaaa ctgtgactat 480
tctctgaaaa tgagcctata tctcatactt atttattctg tttaacactg tgaaacaaat 540
taagtcctct ggcactatgt atataccata aaaagcttat ttgtaagcct actaattgga 600
c   601

<210> 71
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 71
cctagtacct ccctccctct ttgctctgtt gctctcttcg ggaatgcact ggaaaccacc 60

```
ttcagttctg tttggaattt tcctattcct tattcagaaa gaggaagaag cttttgcatt 120
tactccaacc gttctaccta ttattcccat aaactttctg tgatctcata tcattaggcc 180
aaatgttaat ctttctggga gccaggagac tgctttcaca ttcagaggcc ctggacatat 240
aggactgcct ctaactcact ctaactcagc ttattgactt gaatgcacct ttttaacaag 300
ygactaaaaa acaaactgtg actattctct gaaaatgagc ctatatctca tacttattta 360
ttctgtttaa cactgtgaaa caaattaagt cctctggcac tatgtatata ccataaaaag 420
cttatttgta agcctactaa ttggaccagt tttgacaata ttgaataagc actaattgca 480
gatcataatg tagaattata ggctgctgag gaaaacaata tcacaccatt tgctttcctc 540
agtttccttt tcagaatgag tttcataatg ttcactaatc caatttttaa aatcctttac 600
a                                                                601


<210> 72
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 72
aaccgttcta cctattattc ccataaactt tctgtgatct catatcatta ggccaaatgt 60
taatctttct gggagccagg agactgcttt cacattcaga ggccctggac atataggact 120
gcctctaact cactctaact cagcttattg acttgaatgc accttttaa caagtgacta 180
aaaaacaaac tgtgactatt ctctgaaaat gagcctatat ctcatactta tttattctgt 240
ttaacactgt gaaacaaatt aagtcctctg gcactatgta tataccataa aaagcttatt 300
ygtaagccta ctaattggac cagttttgac aatattgaat aagcactaat tgcagatcat 360
aatgtagaat tataggctgc tgaggaaaac aatatcacac catttgcttt cctcagtttc 420
cttttcagaa tgagtttcat aatgttcact aatccaattt ttaaaatcct ttacaaagtt 480
attcttaaac tatttccaga gactatctgg tttgtcattc tagaaatgaa attgcctttt 540
cagcctaaac agatggcctt aatttttggt ggagtggtat gaaaggaatg tcacatgaga 600
a                                                                601


<210> 73
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 73
tatccagtta cagcagcgta acttgagcag ctgctgcaaa ctgaggctct cttgaccctt 60
cgcctactta tttcagctgc taaaataggg ctgaaatctg tcaaggatcc tgaagggaag 120
gataagattc ctactattca atttaattta agctttattt cagtgcctgc tgtgtgcaca 180
acactaagct agaaagtctg aggaatgttt agattattag gtcctgttcc ttgcctttca 240
tagatttaca atctattgat agggagagct aaaaaggaga gaaagaggaa ggagcaaaca 300
yaaaaacgtc aaaattttaa aataccattt taaaatttta ttttaaaatg ttaaatacca 360
tgcaaaatta aggaaaacct agattcataa aaattccttt cacaatcttg tgtaaatcaa 420
ttcagtgctt gcccttaatg tctcatccag tctgatgaga catgttttgt gatcaacaag 480
ggttttacta tgtttcttaa ttatgtgtct tgcctgttat ctctttctga ccgagattat 540
ttttaacaat aaattctgaa aactaagaaa gtgaaagcat aaaatattgt cttataaaat 600
a                                                                601


<210> 74
<211> 601
<212> DNA
<213> Homo Sapiens

<400> 74
aaaaacgtca aaattttaaa ataccatttt aaaatttat tttaaaatgt taaataccat 60
gcaaaattaa ggaaaaccta gattcataaa aattcctttc acaatcttgt gtaaatcaat 120
tcagtgcttg cccttaatgt ctcatccagt ctgatgagac atgttttgtg atcaacaagg 180
gttttactat gtttcttaat tatgtgtctt gcctgttatc tctttctgac cgagattatt 240
```

```
tttaacaata aattctgaaa actaagaaag tgaaagcata aaatattgtc ttataaaata 300
sgccaaggaa aaaatgacac tccatttcaa atatcaaaag ttagcatcaa gactgcacaa 360
gatgaatgta cagtcatgtg ttgcttacaa atgtggacat attctgagaa atgcatcttt 420
aggcaatttt gtcattgtgc aaacaccata gattgtactt gcagcctaat tggtggagcc 480
tactatacac taaggctata tggcatagcc tagtactcct aggctacaaa cctgtacagc 540
atgttactgt actgaatagt ggaggtacct gtaacataat ggtaagtatt tgtgtctcca 600
a                                                              601


<210> 75
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 75
agtactccta ggctacaaac ctgtacagca tgttactgta ctgaatagtg gaggtacctg 60
taacataatg gtaagtattt gtgtctccaa acgtagaaaa gctactgtaa aaatacagta 120
ttacaacctt agggtatcac tgtcttatat gtggtctgtt gttgaccgaa atgactatgc 180
ttaataccac tgaactgtac acttaaaaat ggttaagatg gtaaattcta tgttatgtat 240
gttttataat aataaaaaaa ttgaaaaaag catcaacatc ttttctggga aaaaagaaaa 300
rgaaagaaaa tgcattagag tgatgagaat atttgaagta atagataaag tcaaaaacaa 360
agaaatgatc ttgcctttga actttcttgt ttaagattcg tacatcagtg atcacactgt 420
tatttcccaa acgacccttc agctggatac gacatttcct gattgcagct gtgcttattg 480
cacttaataa tgttctggtc atccttgtgc caactataaa atacatcttc ggattcatag 540
gtgagtttca gaaaggcttc aatttggtca acccaaactc acgcctcatt aaatgatgga 600
c                                                              601


<210> 76
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 76
ggtttattta aagtgtgtgc tggcatctcc tttgctagga actgctgggt aagacattga 60
ccttgccctg tgtttgtctt ctcaggggct tcttctgcca ctatgctgat ttttattctt 120
ccagcagttt tttatcttaa acttgtcaag aaagaaactt ttaggtcacc ccaaaaggtc 180
ggggtaagta aaccttgcaa tttcccccat tattagttgt tcttccaact acttagaata 240
aactagaaaa tacacatagt tcagaaaaat gaatcaatgt acaagaacca aaaatcaaaa 300
mtgggctaga actttctggt agcagagaaa ggggacatat ttctgaaact caaatgattc 360
tacttcaaat atcaaatatc ctgtgttgag tctgtcatac atgtcaaata gtagtagcct 420
ttcccacaga cacatatgct tcaggcaaat agcagtgtcc aataccaagc tgctgttgtg 480
ctatccgtgg aaaatcatgc aagaaggaat taggctccct agcggtgtta tggaataatt 540
taaatatttt ggtcatggtt gttaggtttg caaagccaaa ggaaagatgt tgctttttgtt 600
t                                                              601


<210> 77
<211> 601
<212> DNA
<213> Homo Sapiens


<400> 77
ctttttatggt tagtttgaaa gaatccattg aagatagaaa atgagagaat agaagaaacc 60
tgagaatagt aaaataaaga gcagagaaaa tatgggggca gggaaaacat gtgagtgcta 120
aggattgatt atgaatgaac gattagggggg attgatggat cacagggtaa gtatatgctt 180
aactttataa gaaacttcca catagttttc cacagtgttt ctaccatttt catttccacc 240
cgtactacct acaacttcca ctgactccac agccctgcca acatttggtg ttgtcttttg 300
yattttagcc tttctagtgg gtctgaaatg gtaactcatt gtgattttca tttctgcttc 360
tgtgacaact aatgttgaaa acttttcaag tgtttaatgg tcactcatat atcttctttt 420
```

33

```
gtgaagtgtg tattcaaatc ttttgcccat ttttaaaatt taggttatgt gtttttattg 480
ggtatttgta gaagctcttt aaatatggat ccatgtccag attgccaata tattttccca 540
gtctatggta tggttgctta ttttcctaaa ggtgtcttaa ttacatcttt ctggggccag 600
g                                                                 601

<210> 78
<211> 445
<212> DNA
<213> Homo Sapiens

<400> 78
tttcatttct gcttctgtga caactaatgt tgaaaacttt tcaagtgttt aatggtcact 60
catatatctt cttttgtgaa gtgtgtattc aaatcttttg cccattttta aaatttaggt 120
tatgtgtttt tattgggtat ttgtagaagc tctttaaata tggatccatg tccagattgc 180
caatatattt tcccagtcta tggtatggtt gcttattttc ctaaaggtgt cttaattaca 240
tctttctggg gccaggtcac catagctcaa agttttgcaa tttatgtctt aatgagataa 300
wattaatcag agtggtatag tcaaaattaa atgttttgat gtcctgggcc catataggta 360
ggactggatc atctaaccaa gatgcaaaaa aaaaaaaaca aaaaaacaaa aatagtactt 420
ggaaaaactt attttaaatt aaaca                                       445
```